DEPARTMENT: WATER AFFAIRS

CHIEF DIRECTORATE: RESOURCE DIRECTED MEASURES

DIRECTORATE: WATER RESOURCE CLASSIFICATION

THE CLASSIFICATION OF SIGNIFICANT WATER RESOURCES IN THE OLIFANTS-DOORN WATER MANAGEMENT AREA

(WMA 17)

SOCIO-ECONOMIC OVERVIEW OF THE OLIFANTS-DOORN WMA and THE SOCIAL IMPACT OF THE PROPOSED CLASS CONFIGURATIONS

APRIL 2012

This report should be read in conjunction with the final integrated project report:

Department of Water Affairs, South Africa, April 2012. Classification of significant water resources in the Olifants-Doorn WMA final integrated report. Report number: RDM/WMA17/00/CON/CLA/0111.

Prepared for:
Department of Water Affairs
Chief Directorate: Resource Directed Measures
Private Bag X313
Pretoria
0001
CONTACT PERSON:
Ms. Tovho Nyamande
Tel: 012-336 7521
Fax: 012-336 6712
Email: Nyamandet@dwa.gov.za
Report number:

Prepared by:
Mr Tony Barbour
Environmental Consulting
P O Box 1753
Sun Valley
7975
CONTACT PERSON:
Mr. Dana Grobler
Tel: 021 887 7161
Fax: 021 887 7162
Email: dana@bluescience.co.za

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APPROVED BY BLUESCIENCE CONSULTING cc

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MR D.F. GROBLER
PROJECT LEADER

APPROVED BY DEPARTMENT OF WATER AFFAIRS

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MS. S. NAIDOO
DIRECTOR: WATER RESOURCES CLASSIFICATION

EXECUTIVE SUMMARY

KEY SOCIO-ECONOMIC INFORMANTS

- Local economy is dominated by agricultural sector (~ 43 % GDPR), followed by Manufacturing (~ 25% GDPR). The manufacturing sector is largely linked to the processing of agricultural products;
- Agriculture and Manufacturing account for ~ 50% of employment;
- Agriculture accounts for 95% of the water use in the OD WMA;
- The available water resources in the OD WMA are already fully utilised and shortages occur in Olifants sub-region which has the highest concentration of the population (75%) and accounts for 65% of the water used;
- The majority of the population (~70) live in urban settlements, while the remaining 30% live in the rural areas;
- All of the main towns, with the exception of Calvinia are located on Olifants River;
- Population growth in the ODWMA is low, and negative in some areas;
- In-migration to the area is low;
- Agriculture will remain the dominant economic sector. Growth in the agriculture sector has, however, been slow and employment is seasonal;
- The needs of emerging farmers, both in terms of land and water, need to be addressed;
- Education, income and skills levels in the region are low. This is exacerbated by the dominance of the agricultural sector;
- Tourism represents a key growth sector;
- The mining sector may grow in the future and place additional pressure on water resources.
- The West Coast District Municipality (WCDM) has been identified as the region in South Africa that is likely to be the most affected by global climate change.

SUMMARY OF WATER USERS

Per sub area

- Olifants sub-area: 66% (Accounts for ~ 75 % of population)
- Kouebokkeveld sub-area: 18% (Accounts for ~ 2 % of population)
- Sandveld sub-area: 10% (Accounts for ~ 8 % of population)
- Doring sub-area: 4% (Accounts for ~ 15 % of population)
- Knersvlakte sub-area: 2% (Accounts for ~ 1% of population)

Per economic sector

- Agriculture: ~ 95%
- Urban and industrial (including manufacturing): ~2%
- Rural use, including livestock: ~ 2%
- Mining: ~ 1%

SUMMARY OF AMENTITY AND ENVIRONMENTAL VALUES

- Olifants River estuary is one of only three permanently open estuaries on the west coast of South Africa. Ranked as the third most important estuary in South Africa in terms of conservation;
- Olifants Estuary an important resource for the local community at Papendorp;
- Verlorevlei wetland in the Sandveld (RAMSAR status);

- Cederberg Wilderness Area and the northern section of the Groot Winterhoek Wilderness Area. These areas also represent the key catchment areas for the Olifants River;
- Olifants River and Doring River are important from a conservation perspective as they contain a number of indigenous and endangered endemic fish species;
- Clanwilliam dam and Bulshoek barrage (amenity and recreational values linked to water);
- White water rafting on Doring River;
- Tankwa-Karoo National Park.

SUMMARY OF AGRICULTURAL-ECONOMIC STUDY

The key conclusions of the agricultural-economic study indicate that all of the WMA's, on farm level, will experience a significant increase in profit generation if water availability can be increased according to the projected levels. In the case of the Lower Olifants River basin, such a change is desperately required by farms with a size similar to that of the typical farm model. A regional level the increased availability of water will result in significantly greater welfare creation. This will in turn generate more upstream (input side of the farm) and downstream (marketing of the farm produce) benefits.

The reduction in water availability as in the case of Area 2 of the Sandveld has a similar magnitude, but negative financial impact. The low IRR of 3.2% warns that such a reduction in water availability will mean the termination of most farms in the particular area if the reduction is applied to all farming activities.

In terms of employment, all the WMA areas show an increase in employment numbers in response to an increase in water availability, except for seasonal labour in the Lower Olifants River basin, due to the potential termination of labour intensive vegetable production. More water and greater assurance of delivery are essential for the longer term viability of the typical farm and the protection of the employment capacity of wine grape production.

REVIEW OF THE SOCIO-ECONOMIC CLASSIFICATION GUIDELINES

The proposed approach to and methods proposed in the classification guidelines used for measuring well-being were found to be problematic in that they assume that the factors that inform and are used to measure well-being are closely linked to water and ecosystem health. However, as indicated above, there are a number of other factors that are likely to have a more important bearing of overall well-being. In addition, for many of the indicators/measures it is not possible to establish a clear link between well-being and water. Changes in the water resource class are therefore likely to have little or no bearing on these indicators. Their applicability and use when considering scenarios for assessing water resource classes and comparing scenarios is therefore likely to be limited.

As a result Step 1E (Describe communities and their well-being) and Step 1J (Describe the present-day community well-being within each IUA) are likely to be challenging. This has direct implications for Step 1L (Develop and or adjust the socio-economic framework and the decision-analysis framework). Due the potential concerns regarding the type of information used to measure societal well-being and challenges associated with establishing TEV, is it recommended that consideration be given to simplifying these aspects of the socio-economic assessment process for the WRCS and the associated determination of water resource class.

CONCLUSION

The key findings of the socio-economic study indicate that the agricultural sector followed by manufacturing represent the key economic sectors in the ODWMA both in terms of contribution to GDPR and employment. Together they account or ~ 68% of the GDPR and 50% of the employment. The agricultural sector is also the single largest consumer (user) of water (95%). Urban and industrial (including manufacturing) (2%), rural use, including livestock (2%) and mining (1%) make up the remaining 5%. In terms of population, the majority of the population (~70) lives in urban settlements, while the remaining 30% lives in the rural areas. The water supply of the majority of the population is therefore linked to and dependent upon the local authorities in the ODWMA. The Olifants sub-area, which has 75% of the total population of the ODWMA, accounts for 66% of the water usage. Koue Bokkeveld sub-area, which has 2 % of the population accounts for 18% of the water usage. The sandveld sub-area which accounts for 8% of the population, accounts for 10%. The study also found that population growth in the ODWMA is low and negative in some areas. Future growth in demand for water is therefore likely to be linked to increased demand from agricultural sector and not due to increased demand linked to population growth.

The findings of the agricultural-economic study indicate that all of the WMA's, on farm level, will experience a significant increase in profit generation if water availability can be increased according to the projected levels (taking all the assumptions into consideration). In the case of the Lower Olifants River basin, such a change is desperately required by farms with a size similar to that of the typical farm model. A regional level the increased availability of water will result in significantly greater welfare creation. This will in turn generate more upstream (input side of the farm) and downstream (marketing of the farm produce) benefits.

In terms of employment, all the WMA areas show an increase in employment numbers in response to an increase in water availability, except for seasonal labour in the Lower Olifants River basin, due to the termination of labour intensive vegetable production.

Based on the above information the proposed scenario of a 15%, 13.3% and 10% increase in water availability for agricultural use in selected areas of the Koue Bokkeveld, Lower Olifants River and LORWUA distribution area respectively will result in socio-economic benefits for the affected farmers and the ODWMA as a whole. This is due to the dominant role played by the agricultural and the associated manufacturing sector in the areas local economy. However, it should be noted that such an improvement will not necessarily translate into an improvement of the over well-being of all communities in the ODWMA. Such an improvement is also dependent upon a range of other factors that are not necessarily directly linked to determination of a management class (water resource class). These include improved education and access to basic services, such as housing, sanitation and electricity etc. The provision of and improved access to these services is linked to the performance of the relevant national, provincial and local authorities. Likewise the 15% increase in water availability will not necessarily translate into benefits for emerging farmers. The success of emerging farmers in the ODWMA is linked to a range of other factors which fall outside the scope of a water resource classification exercise, including the cost of land and capital equipment, support from government, market fluctuations, interest rates and the fuel price etc.

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SECTION 1: INTRODUCTION

1.1 INTRODUCTION

The Olifants/Doorn water management area (WMA) is located on the west coast of South Africa, extending from about 100 km to 450 km north of Cape Town. Approximately half of the water management area, the south-western portion, falls within the Western Cape Province, and the arid north-eastern portion in the Northern Cape Province. In terms of other WMA areas, the Olifants/Doorn borders on the Lower Orange water management area to the north and east, on the Gouritz, Breede and Berg water management areas in the south, and on the Atlantic Ocean in the west. The major river in the water management area is the Olifants River, with the Doring River as its main tributary.

1.2 APPROACH TO STUDY

In terms of existing data, Volume 3 of the classification Socio-Economic Guidelines for the 7-Step Classification Procedure, provides detailed socio-economic data on the Olifants/Doorn WMA. This report was completed in February 2007 and is largely based on 1996 and 2001 Census data. The aim of this report is to provide an up-date of the local baseline socio-economic data for the Olifants/Doorn WMA.

In terms of its administrative setting the Olifants/Doorn WMA falls within two District Municipalities, namely the West Coast District Municipality (WCDM) and Cape Winelands District Municipality (CWDM) in the Western Cape Province and the Namakwa District Municipality (NDM) in the Northern Cape Province. The relevant local municipalities within these district municipalities are the Matzikama, Cederberg, Berg River Local Municipalities and West Coast Management Area in the WCDM, the Witzenberg LM (Cape Winelands District Municipality) and the Hantam and Kamiesberg Local Municipality in the NDM. These DM and LM provide the basis for the socio-economic overview of the Olifants/Doorn WMA.

The approach to the study involved:

- Review of demographic data from the 2001 Census Survey;
- Review of relevant planning and policy frameworks for the area, specifically Integrated Development Plans and the West Coast Socio-Economic Profile;
- Review of existing reports and documentation on the Olifants/Doorn WMA; and
- Review of the key findings of the specialist Agricultural Study.

In addition, a review of Volume 3: Socio-Economic Classification Guidelines was undertaken. The aim of the review was to comment on the procedures listed in the Classification Guidelines .

1.3 ASSUMPTIONS AND LIMITATIONS

1.3.1 Assumptions

Existing data on the Olifants/Doorn WMA
There is a wealth of existing socio-economic data available on the Olifants/Doorn WMA, for example the information contained in the Volume 3 of the Socio-Economic Classification Guidelines for the 7-Step Classification Procedure. The purpose of this report is not to repeat the data contained in this and other reports but to update the current socio-economic data for the study area.

Fit with planning and policy requirements
Legislation and policies reflect societal norms and values. The legislative and policy context therefore plays an important role in identifying and assessing the potential social and economic impacts associated with a proposed development, including the allocation of water. Some of the key policies that guide development in local municipalities have therefore been identified and are summarised in the report. Given the critical role played by water in economic and social development, the development of a water resource classification system for the Olifants/Doorn WMA should be in line with and support key policies that guide development in local municipalities.

1.3.2 Limitations

Demographic data
The demographic data that is available for the study area is largely based on the 2001 Census[1]. While this data does provide useful information on the demographic profile of the affected area, the data are dated and should be treated with care. Where possible reference has been made to the latest demographic data contained in local Integrated Development Plans and other documents.

In addition, the socio-economic data for the study area is linked to the administrative areas, namely the local municipalities and associated wards, and not the quaternary catchment areas.

Access to ward level data
There is no longer any access to Census 2001 data at Ward level via the Municipal Demarcation Board. As such, it was not possible to get ward level data for the local municipalities in Olifants/Doorn WMA. The socio-economic data is therefore described at District and Local Municipal level only.

1.4 REPORT STRUCTURE

The report is divided into 11 sections, namely:

- Section 1: Introduction;

[1] The last comprehensive national census was conducted in 2001. Census 2001 provided demographic and socio-economic data from National to Municipal Ward level. An interim Community Survey (sample based) was undertaken in 2007, but provided information only on provincial and municipal levels. The next comprehensive national census is planned for 2011.

- Section 2: Comment on Volume 3: Socio-economic Classification Guidelines for the 7 Step Classification System;
- Section 3: Overview of key findings of agricultural study;
- Section 4: Overview of the West Coast District Municipality Region;
- Section 5: Overview of the Matzikama Local Municipal Area;
- Section 6: Overview of the Cederberg Local Municipal Area;
- Section 7: Overview of the Berg River Local Municipal Area;
- Section 8: Overview of the Witzenberg Local Municipal Area;
- Section 9 Overview of the Hantam and Kamiesberg Local Municipal Area[2];
- Section 10: Overview of key policy documents affecting the study area;
- Section 11: Summary of key socio-economic findings.

[2] At the time of undertaking the study copies of the Namakwa DM and Hantam LM Integrated Development Plans could not be accessed from the Namakwa DM website.

SECTION 2: COMMENT ON VOLUME 3, SOCIO-ECONOMIC CLASSIFICATION GUIDELINES

2.1 INTRODUCTION

The Guideline document (Volume 3) notes that in contrast to the ecological component (see Brown *et al.*, 2007) of the WRCS, which can draw on over 10 years of Reserve experience, the socio-economic component breaks new ground, and can only draw on a limited number of studies to aid its development. The Classification Guidelines go onto note that "for this reason, before presenting the socio-economic guidelines for the 7-step classification procedure, it is necessary to highlight a number of concepts, methods and measures (e.g. Ecosystem Goods, Services and Attributes (EGSAs), the measurement of economic value and the measures of economic implications and social wellbeing) that provide the context for the 7-step procedure" (Section 2, p5).

It is the understanding of the consulting team that the Olifants/Doring study represents one of the first applications of the classification system to a catchment and Water Management Area in South Africa. It is therefore the opinion of the project team that it is necessary to comment on the socio-economic guidelines presented in Volume 3 of the classification guidelines (February 2007).

2.2 CONCEPTUAL FRAMEWORK

Section 2 of the Guideline Document outlines the socio-economic conceptual framework for the classification system. Key concepts of the system include:

- The concept of ecosystem goods, services and attributes and types of values; and
- The concept of societal well-being.

Under Section 2.1, the Guideline notes "the NWA calls for the efficient, equitable and sustainable use of the nation's water resources. These economic, social and ecological goals respectively, are embodied in DWA's official motto, '*ensuring some, for all, for ever, together*'. The economic goal of efficiency relates to maximising economic returns from water resources, or achieving the maximum net benefit. The social goal of equity seeks to allocate and distribute the costs and benefits of utilising the resource fairly, while the ecological goal of sustainability seeks to promote the use of resources in a way that meets the needs of current generations, but does not compromise the economic opportunities and social wellbeing of future generations". "To assess the economic prosperity and social wellbeing implications of different catchment configuration scenarios, the socio-economic component of the classification procedure should make provision for assessing the target catchment's current socio-economic status and the potential economic and social wellbeing implications of different options (scenarios). These implications may be considered at various scales".

Given that the classification systems seeks to allocate a water resource class to all water resources in the catchments it is essential to ensure that there is a clear link between the methods, concepts and measures used to measure the well-being of the affected catchment community and water. In the absence of such a link it will not be possible to determine how different water resource class linked scenarios will impact on these communities and their social well-being. This highlights the importance of ensuring that the appropriate water related indicators for well-being are selected as opposed to simply collecting general baseline data that, on closure scrutiny, may be of limited value to the assessment and comparison of scenarios.

In this regard the study found that a number of the indicators listed in Volume 3 were of limited value. This is discussed in more detail below.

2.2.1 Environmental goods and services

Volume 3 makes detailed reference to the concept of ecosystem goods and services, and stresses the importance of "estimating the economic values associated with aquatic and other water dependent ecosystems, and consequently, to estimate how these values would change if these systems were to be altered in any way, for example by changes in class" (p5).

Section 2.2 provides a detailed description of the concept of ecological goods and services and the concept of Total Economic Value (TEV). However, the section lacks comment on the applicability and appropriateness of this approach to the Olifants/Doorn catchment system and WMA. As a result the use values for water listed under Section 2.4, food and medicine (2.4.1.1.) and Raw Materials (2.4.1.2) are not appropriate for the Olifants/Doorn WMA and will have limited value in terms of informing the determination of a water resource class. For example, when one considers the ecosystem goods, services and attributes of water dependent ecosystems listed in Table 2.2 (p9), the majority of them were not found to be relevant to the Olifants/Doorn WMA. These include Carbon sequestration, climate regulation, disturbance regulation, sediment retention, genetic resources and cultural, spiritual and educational value and amenity. Amenity value, described as "riparian trees may provide valuable shade for livestock and people", is likely to be extremely limited and would have no implications for the determination of the water resource class. This highlights the need to get a good understanding of the local conditions and the linkages between the ecosystem, specifically water, and the social well-being of the affected communities. This enables the assessment to focus on the aspects that are relevant and will have a bearing on comparison of alternative scenarios.

What appears to be a more useful and pragmatic approach is to identify the key sectoral users of water. This is done under Section 2.5.1, Typology of sectoral users of water and aquatic ecosystems (p14). Table 2.3 lists the water users defined by DWAF. Based on the study, the most relevant water users in the Olifants/Doorn WMA are Irrigation, Urban Use, Industrial Use and the Ecological Reserve. This approach enables one to gain a clearer understanding between the water in the systems, the uses and the potential implications for the users associated with different scenarios.

2.2.2 Measures of economic impact

Based on the study the two most relevant measures were:

- Key measures listed include contribution to Gross Geographic Product (GGP), and
- Job creation

Both of these measurements can be linked to water use, which enables the study to assess the potential impacts associated with alternative water resource class's. For example in the case of the Olifants/Doorn WMA, the agricultural sector is the most important sector in terms of both GGP and employment. It is also the single largest water user.

Capital formation and household income and income distribution were found to be less useful.

2.2.3 Measurement of societal well-being

This aspect of the approach and the methods identified to measure societal well-being were also found to be most problematic. Under section 2.6, the Classification Guidelines note "In order to evaluate the implications of alternative catchment configuration scenarios (Brown *et al.*, 2007) in the Classification Process, community types within each targeted catchment need to be described in terms of their current wellbeing". The section goes onto state that "wellbeing is linked to economic (sectoral) output (which determines employment and income), but is also influenced directly by ecosystem health (which affects livelihoods, health and income)". The link between ecosystem health and well-being is not disputed, however, this link is generally only possible to "quantify" and assess when dealing with rural communities whose livelihoods are dependent upon the use of natural resources and ecosystem services. In this regard the sustainable livelihoods approach is best suited to rural communities and less applicable to urban communities. However, even with rural communities there may be no link between rivers and livelihoods, for example communities that rely on dry land cultivation and rainfall or groundwater. A change in the water resource class would have little or no impact on such communities. Likewise, the impact of a change in the water resource class on well-being of communities (both non-rural and rural) whose water needs are met by the local authority for their water would also be limited.

The section that deals with measuring poverty, vulnerability and well-being acknowledges that this is a complex notion. In addition to this, the measurement of well-being is dependent upon a range of other factors, the majority of which are likely to be more important to and where the link to water is not clear or difficult to quantify, such as employment, education access to basic services, health etc. The collection of detailed baseline socio-economic data does provide the study with an overview of the status of the community in catchment area. However, one needs to determine if this data is useful, specifically when it comes to assessing different water related scenarios.

In general the focus of the discussion with in the Classification Guidelines on well-being and its measurement is largely applicable to rural, subsistence communities. The section has limited relevance to urban communities and or rural communities that do not rely subsistence agriculture to sustain their livelihoods.

The potentially available socio-economic measure listed in Table 2.8, (p24) that would be potentially useful for determining well-being was also found to be problematic, specifically with regard to their use in terms of assessing water related

scenarios. For example the links between household income, rate of employment and education of household head, which are all rated as having a high suitability, and a water resource class linked scenario would be extremely difficult if not impossible to establish. The table also lists Water Supply and Sanitation (type of toilet) as also being highly suitable measurements for well-being. These measurements do provide a good indication of overall well-being, however water supply and sanitation are largely dependent on service levels and the competency of local authorities, and less on actual water availability. Changes in the water resource class are likely to have little or no bearing on these indicators. Their applicability and use when considering scenarios for assessing water resource class and comparing scenarios is therefore likely to be limited.

The Classification Guidelines note that the original proposal was to create an Index of Community Well-being based on the sustainable livelihoods approach that included all five types of capital available to different communities. However, it proved difficult to align the scores describing the status quo with those describing changes in wellbeing under different scenarios. In additional as noted above, the sustainable livelihoods approach is largely designed for rural communities whose livelihoods are closely associated with natural ecosystems. Based on this the Guideline proposes a more-simpler index, which concentrates on the three main elements of wellbeing, namely: health, wealth and happiness. The index is illustrated in Figure 2.4 (p26) in the report and below (Figure 2.1).

In terms of the proposed index, prosperity or wealth is indicated by a simple measure of the proportion of households that are non-poor and is linked to household income levels. The Guideline notes that the baseline value should be calculated on the basis of reported income plus the value of aquatic ecosystem resources harvested by households for own consumption. Health will reflect the proportion of households that are entirely healthy at any one time. The Guideline states that happiness is probably related to prosperity and health, but for the purposes of classification will primarily reflect the utility derived from aquatic ecosystems. This utility accounts for the intangible use and non-use values associated with these systems.

Although Figure 2.4 (Figure 2.1 in the text) does highlight the link well-being, water use and aquatic ecosystem health, in practice it is likely to be difficult to quantify these links and separate them from other factors that are likely to have a more important bearing on well-being, specifically in non-rural households and households whose water supply is provided by local authorities. In addition, the majority of data sources may not lend themselves to disaggregation so as to enable the assessment to determine which values are water related and which values are linked to other, non-water related a factors.

For example in the case of household income, typical census derived data is provided at ward levels. It would be difficult if not impossible to determine which of these households income is specifically linked to water use and how this would be affected by different MS related scenarios. In addition, household income levels are dependent upon a range of other factors, specifically education, which have little or no direct link to water. In terms of health, while the health of local communities, specifically isolated rural communities, can be linked to infectious diseases, water related diseases and water borne diseases, health at a ward and broader community level is more likely to be linked to income and education levels, and access to and provision of health services.

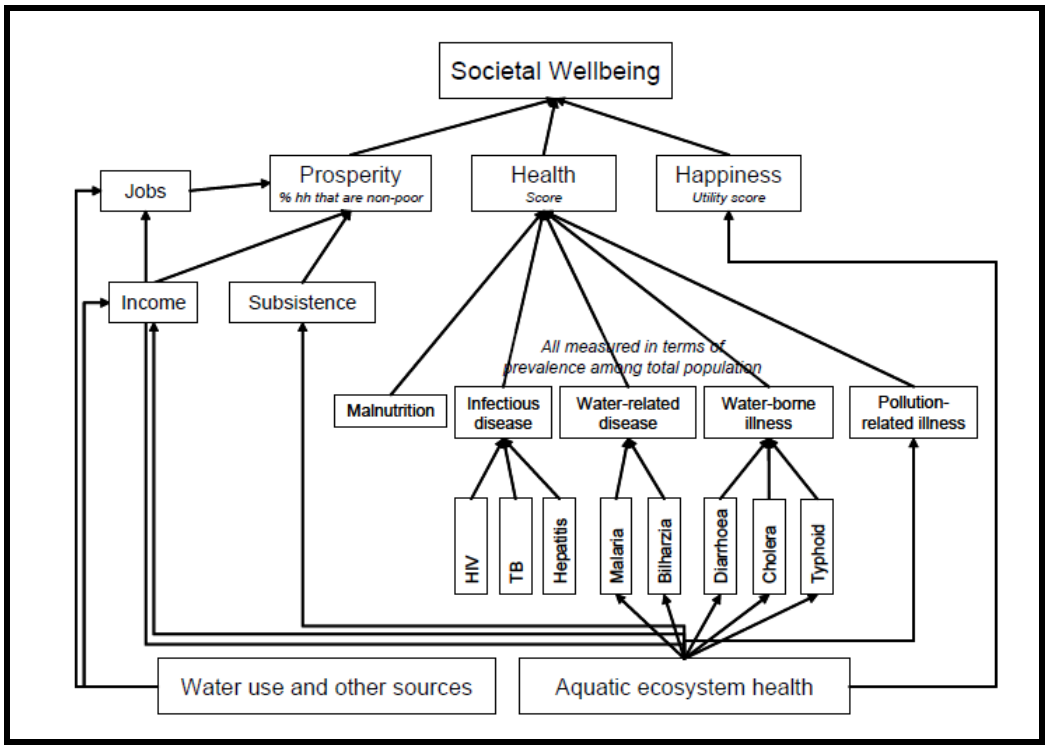


Figure 2.1 Proposed structure for measuring social wellbeing

2.2.4 Conclusion

The proposed approach to and methods used for measuring well-being were found to be problematic in that they assume that the factors that inform and are used to measure well-being are closely linked to water and ecosystem health. However, as indicated above, there are a number of other factors that are likely to have a more important bearing of overall well-being. In addition, for many of the indicators/measures it is not possible to establish a clear link between well-being and water. Changes in the water resource class are likely to have little or no bearing on these indicators. Their applicability and use when considering scenarios for assessing water resource class and comparing scenarios is therefore likely to be limited.

As a result Step 1E (Describe communities and their well-being) and Step 1J (Describe the present-day community well-being within each IUA) is likely to be challenging. This has direct implications for Step 1L (Develop and or adjust the socio-economic framework and the decision-analysis framework). Figure 9.1 (Figure 2.2 in the text below) in the Classification Guidelines illustrates the **i**nformation pathways for the proposed socio-economic valuation framework for the 'proof of concept' catchment. The diagram provides a very detailed illustration of the information required to determine economic prosperity and societal well-being. However, due the potential concerns regarding the type of information used to measure societal well-being and challenges associated with establishing TEV, is it recommended that consideration be given to simplifying the socio-economic assessment process for the WRCS and the associated determination of water resource class.

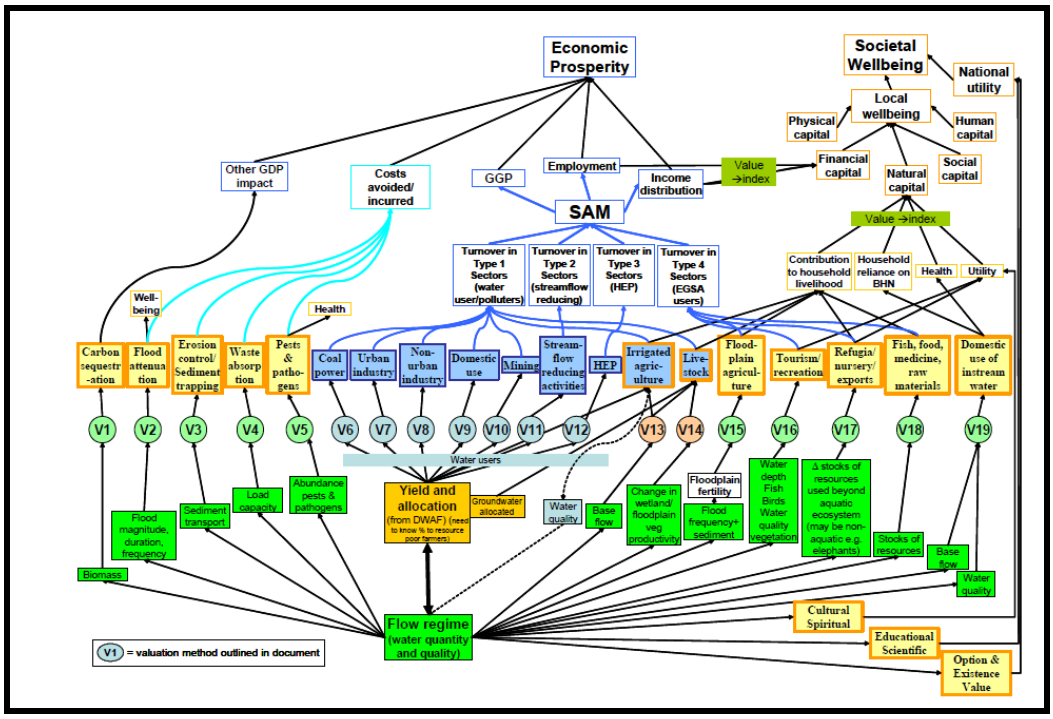


Figure 2.2: Information pathways for the proposed socio-economic valuation framework for the 'proof of concept' catchment

The steps that can use existing baseline data are:

- Description of the present day socio-economic status of the catchment area (Step 1A);
- Division of the catchment into socio-economic zones (Step 1B);
- Description of the value and use of the water (Step 1F);
- Description of the value and use of aquatic ecosystems (Step 1G). The valuation of aquatic ecosystems can be a complicated and costly exercise and requires detailed data. However, establishing a monetary value may not be necessary if one provides a detailed description of the use of aquatic ecosystems and how they contribute to the overall well-being of the catchment area. For example, in the case of the Olifants Doring catchment, the high altitude catchment areas play a critical role in the functioning of the system. One does not necessarily have to attach a monetary value to this function to highlight the importance of maintaining these areas in their current, undisturbed status. A detailed ecological description of the role that the aquatic ecosystem plays is therefore likely to be more valuable than attempting to attach a monetary value.

However, it is important to ensure that the links between the data and water are made.

SECTION 3: OVERVIEW OF AGRICULTURAL STUDY

3.1 INTRODUCTION

The section below presents the key results of the agricultural-economic study undertaken by Prof TE Kleynhans and Dr WH Hoffmann of the Department Agricultural Economics University of Stellenbosch (April 2012) that have a bearing on the socio-economic aspects of the Olifants-Doorn WMA Classification. The agricultural-economic component of the Olifants-Doorn WMA Classification project describes the financial-economic and employment impacts of a possible reduction or increase in water allocated to farming after taking into account the requirements of the ecological reserve.

3.2 KOUE BOKKEVELD WMA

The total area currently irrigated is 8 600 ha and the area is well known for its deciduous fruit production, mainly apples and pears, mainly for the export market. Deciduous fruit production is complemented by vegetable production. This combination allows an assured availability of irrigation water for the perennial crops and surplus water with less certainty of availability for annual crops (vegetables). The climate allows high yields, making this area one of the most productive agricultural areas in South Africa. Water for irrigation is extracted from rivers like the Leeu River which feeds the Doring River. Water is mostly stored in dams on farms constructed with private capital. Water is often gravity fed from the dams located at higher altitudes to orchards, saving on pumping cost.

Projected change in water allocation
An increase of 15% in water availability was projected in some parts of the Koue Bokkeveld. The additional water will allow a producer on a typical Koue Bokkeveld farm to expand the irrigated land from 200 hectares to 230 hectares. The amount of water irrigated per hectare will remain at 8 000 m^3. The irrigated area for the Koue Bokkeveld as a whole could theoretically increase from 8 600 hectares to 9 890 hectares.

Financial-economic impacts of projected changed water allocation
The 15% projected increase in water will cause the NPV and the annuity to increase by 36%, despite the fact that the typical farm will have to carry the water storage and distribution cost. The annuity for the Koue Bokkeveld production area will increase from R98 763 502 to R134 656 250, clearly a major increase in welfare creation for the area.

Employment impacts of projected changed water allocation
The increase in seasonal and permanent employment is 13.4 and 13 % respectively, more or less in correspondence with the 15% increase in water availability. The total seasonal labour requirement for the Koue Bokkeveld production area will increase from 810 009 to 918 209 man days, while the total number of permanent labourers will increase from 4 286 to 4 877.

3.3 UPPER OLIFANTS RIVER BASIN

The total area currently irrigated is 7 000 ha. The Upper Olifants area is well known for its citrus production, traditional as well as soft citrus varieties, mainly for the export market. The climate and well drained soils allow high yields, making this area one of the most productive agricultural areas in South Africa. Water for irrigation is extracted from the Olifants River. Winter water is stored in dams on farms.

Projected change in water allocation
If producers are allowed to store more winter water in order to extract their full quota of 12 200 m^3 per hectare, a producer on a typical farm will get 12 200m^3/ha for 75 ha, but will only apply 10 800m^3/ha and will expand the area under irrigation to 85ha, an increase of 13.3%. The irrigated area for the Upper Olifants area as a whole will increase from 7 000 hectares to 7 933 hectares. Additional water can only be obtained by storing winter water. The dam(s) will have to be constructed on farms at the producers' own cost.

Financial-economic impacts of projected changed water allocation
More water and greater assurance of water availability will allow not only an expansion of the irrigated area, but also the planting of more profitable citrus cultivars. The 13.3% projected increase in water will cause the NPV and the annuity to increase by 36%. The annuity for the Upper Olifants production area will increase from R209 224 297 to R264 738 250, a major increase in welfare creation for the area.

Employment impacts of projected changed water allocation
The increase in seasonal and permanent employment is 10 and 12.3 % respectively, slightly lower than the 13.3% increase in water availability. The total seasonal labour requirement for the Upper Olifants River basin production area will increase from 379 102 to 418 284 man days, while the total number of permanent labourers will increase from 5 289 to 5 973.

3.4 OLIFANTS RIVER BASIN BETWEEN CLANWILLIAM DAM AND KLAWER

The total area currently irrigated is 3 000 ha. The Clanwilliam canal supplies water to 1 673 hectares, while the rest of the area (1 327 ha) requires pumping from the Olifants River. The analysis focuses only on the area supplied by the Clanwilliam canal. The area is well known for its table grape production.

Projected change in water allocation
The projected increase of 9.3% in water allocation will allow a producer on a typical farm to expand the area under irrigation to 47 hectares at the same intensity of 7 600 m^3/ha. The irrigated area in the Olifants River basin between Clanwilliam dam and Klawer production area served by the Clanwilliam canal will increase from 1 673 hectares to 1 829 hectares.

Financial-economic impacts of projected changed water allocation
The 9.3% projected increase in water will cause the NPV and the annuity to increase by 47%. The annuity for the Olifants River basin between Clanwilliam dam and

Klawer production area will increase from R17 511 244 to R25 694 986, a major increase in welfare creation for the area.

Employment impacts of projected changed water allocation
The increase in seasonal and permanent employment is 9.3 and 9.4 % respectively, the same magnitude as the 9.3% increase in water availability. The total seasonal labour requirement for the Olifants River basin between Clanwilliam dam and Klawer production area will increase from 768 744 to 840 426 man days, reflecting the labour intensive harvesting of table grapes, while the total number of permanent labourers will increase from 937 to 1 051.

3.5 LOWER OLIFANTS RIVER BASIN

The total area currently irrigated is 10 000 ha. The Lower Olifants River basin is well known for wine grape production. Due to the uncertainty of sufficient water during the summer, producers do not plant their whole irrigable areas with wine grapes, but use some 14% of the area for vegetable production. During a very dry winter the water stored in the Clanwilliam dam is inadequate for irrigation during the summer for the whole irrigable area. Producers can then decide not to plant vegetables as annual crops in order to use the available water for the wine grapes as a perennial crop.

Projected change in water allocation
An increase in the height of the wall of the Clanwilliam dam will improve the assurance of delivery by bridging dry winters and thus a more constant full utilisation of the exiting capacity of the Clanwilliam canal. The increased assurance of delivery will lead to the total irrigated area being nearly fully used for wine grape production. Only 6% of the irrigated area will then be allocated to vegetable production. The irrigated area in the Lower Olifants River basin production area will increase marginally from 10 000 hectares to 10 638 hectares.

Financial-economic impacts of projected changed water allocation
The impacts of a projected increase of 6.4% in the area under irrigation, the increase in the quantity of water per hectare of 28%, as well as the assurance of delivery was determined by means of a typical wine grape and vegetables farm model for the Lower Olifants River basin production area. These changes will cause the NPV and the annuity to increase by 93%. The annuity for the Lower Olifants River basin production area will increase from R42 708 644 to R82 215 016, a major increase in welfare creation for the area.

Employment impacts of projected changed water allocation
The seasonal employment will drop by 60% due to the termination of vegetable production which relies heavily on seasonal labour. Permanent employment will remain the same (see Table 2). The total seasonal labour requirement for the Upper Olifants River basin production area will decrease from 274 226 to110 635 man days, while the total number of permanent labourers will stay constant at 1 702. The drop in seasonal employment capacity must be seen as a sacrifice to allow a financially more viable farming pattern. A typical farm currently shows an IRR of only 4.3% which is lower than the real bank interest rate. This implies that a producer can do better by selling his/her farm and invest the money in the bank. Stated

differently, a farmer will not be able to service his/her loan if he/she borrows money from a bank to buy land and farming equipment.

3.6 FARMING IN THE SANDVELD

Potato production on circular fields with sandy soils under centre pivot irrigation systems fed by groundwater is the common intensive farming practice in the Sandveld. A rotation system of one season potatoes on an irrigated circle, followed by five years winter grain on the same circle to combat soil pathogens that would have spoiled a potato crop directly following a previous potato crop.

Projected change in water allocation
Area 1: An increase of 15% water extraction is projected, allowing an increase in the irrigated area from 60 to 69 ha and the total area under circles (irrigated and non-irrigated) from 360 to 414 ha.
Area 2: A decrease of 10% water extraction is projected, forcing a reduction in the irrigated area from 60 to 54 ha and the total area under circles (irrigated and non-irrigated) from 360 to 324 ha.
Area 3: Total irrigated area is 3 500 ha and no change in water extraction is projected.

Financial-economic impacts of projected changed water allocation
Area 1: The 15 % increase in water availability and likewise in irrigated area causes the NPV and the annuity to increase by 114%. The annuity for Area 1 of the Sandveld will increase from R11 771 123 to R25 190 411, a major increase in welfare creation for the area. The reason for the relatively great increase of the annuity in the Sandveld compared to that of the other production area's is the limited increase in capital expenditure needed to expand the area under pivot irrigation.
Area 2: The 10 % reduction in water availability and likewise in irrigated area causes the NPV and the annuity to decrease by 307%. The profitability of potato farming is clearly very sensitive for a reduction in scale of production. The annuity for Area 2 of the Sandveld will decrease from R11 771 123 to R2 829 103, a major setback in welfare creation for the area.
Area 3: No change in profitability will take place. The annuity for the whole area will be R23 542 247.

Employment impacts of projected changed water allocation
Area 1: The 15 % increase in water availability and likewise in irrigated area causes the seasonal and permanent employment to increase by 19% and 17 % respectively. The total seasonal labour requirement for Area 1 of the Sandveld production area will increase from 70 000 to 83 146 man days, while the total number of permanent labourers will increase from 175 to 204.
Area 2: The 10 % reduction in water availability and likewise in irrigated area causes the seasonal employment to decrease by 8% and permanent employment to remain constant (see Table 2). The total seasonal labour requirement for Area 2 of the Sandveld production area will drop from 2 400 to 2 205 man days, while the total number of permanent labourers will remain constant at 175.
Area 3: No change in employment will take place. The total seasonal labour requirement for Area 3 of the Sandveld production area will stay at 2 400 man days, while the total number of permanent labourers will remain constant at 350.

3.7 CONCLUSIONS

The key conclusions of the agricultural-economic study indicate that all of the production area's, on farm level, will experience a significant increase in profit generation if water availability can be increased according to the projected levels. In the case of the Lower Olifants River basin, such a change is desperately required by farms with a size similar to that of the typical farm model. A regional level the increased availability of water will result in significantly greater welfare creation. This will in turn generate more upstream (input side of the farm) and downstream (marketing of the farm produce) benefits.

The reduction in water availability as in the case of Area 2 of the Sandveld has a similar magnitude, but negative financial impact. The low IRR of 3.2% warns that such a reduction in water availability will mean the termination of most farms in the particular area.

In terms of employment, all the production areas show an increase in employment numbers in response to an increase in water availability, except for seasonal labour in the Lower Olifants River basin, due to the termination of labour intensive vegetable production. More water and greater assurance of delivery are essential for the longer term viability of the typical farm and the protection of the employment capacity of wine grape production.

SECTION 4: OVERVIEW OF WEST COAST REGION

4.1 INTRODUCTION

The West Coast is a water scarce region that faces water shortages and supply limitations. The West Coast Socio-Economic Profile (200) notes that in 2004 ~20% of the district's GDPR (Gross Regional Domestic Product) was derived from the agriculture, forestry & fishing sector. The profile points out that the future water shortages faced by the region could act as a significant inhibitor of economic growth. The predicted shortages refers not only to the availability within the resource but also the costs for distributing water from the water resource to the end user.

The majority of the Olifants/Doorn Water Management Area (WMA) falls within the West Coast District Municipality (WCDM), a category C municipality, which is located on the west coast of the Western Cape Province. The district is made up of five local municipalities, namely Matzikama, Cederberg, Bergriver, Saldanha Bay and Swartland, as well as the four District Management Areas, Bitterfontein, the Cederberg Wilderness Area, West Coast National Park and Hexberg (Figure 4.1). In terms of the Olifants/Doorn WMA, the majority of the area coincides with the Matzikama and Cederberg Local Municipalities, while small sections of the WMA also fall within Berg River Local Municipality (LM), Witzenberg LM, Hanatam LM and the Kamiesberg LM.

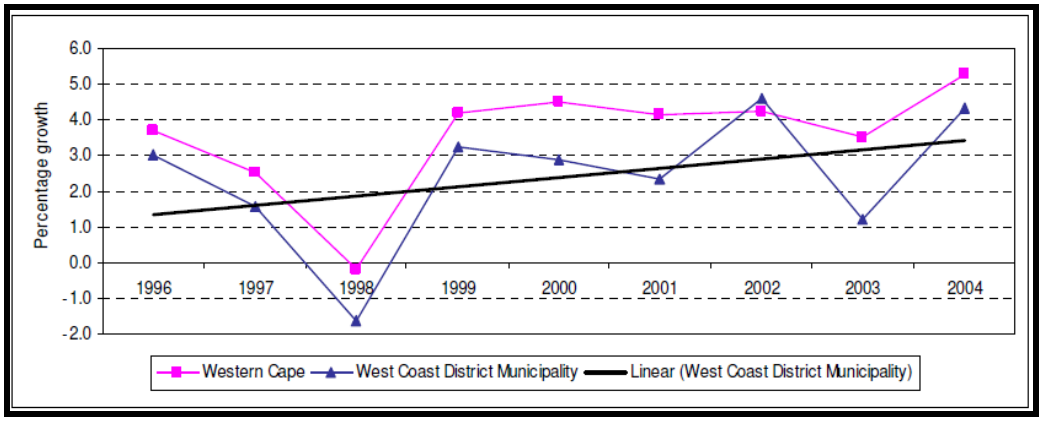
Figure 4.1: West Coast Distict Municipality

4.2 ECONOMIC OVERVIEW

The WCDM contributed ~ 4 % (R5.6 billion) to the Western Cape's total GDPR (R140.9 billion) in 2004. Of all sectors, only the Agriculture, Forestry & Fishing (17.15% of provincial Gross Regional Domestic Product (GDPR) for the sector) and the Mining (18.5% of provincial GDPR for the sector) sectors contributed more than 15 % to the total Western Cape provincial sector in 2004 (Socio-economic Profile: West Coast District, 2006). However, the West Coast Agriculture, Forestry & Fishing and Mining sectors are fairly small, jointly contributing only 4.7 % to the Western Cape's GDPR. All other sectors in the West Coast contributed less than 5 per cent to the Western Cape total for the respective sectors (Socio-economic Profile: West Coast District, 2006).

In terms of economic growth, the WCDM had an annual average growth rate of 2.4 % (1996 to 2004), which was below the Western Cape's average growth of 2.9 %

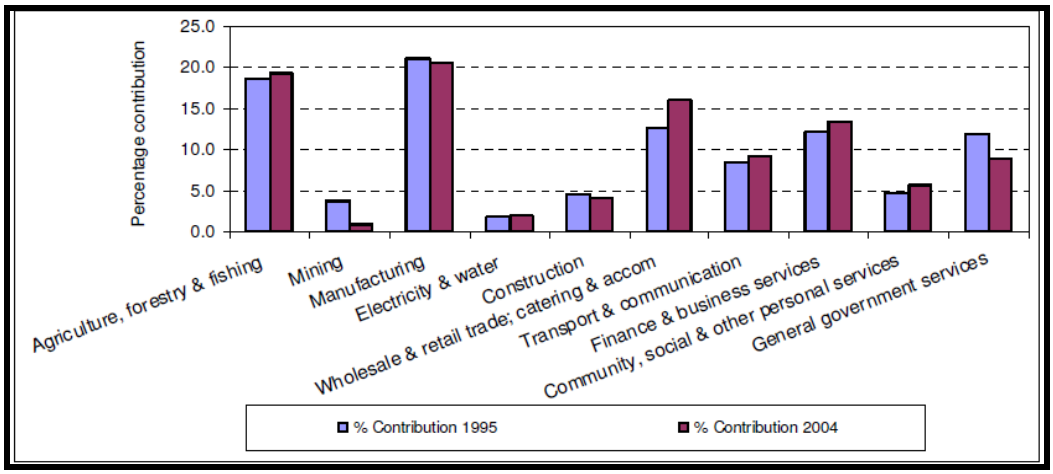
over the same period (Socio-economic Profile: West Coast District, 2006) (Figure 4.2).



Source: Socio-economic Profile: West Coast District, 2006

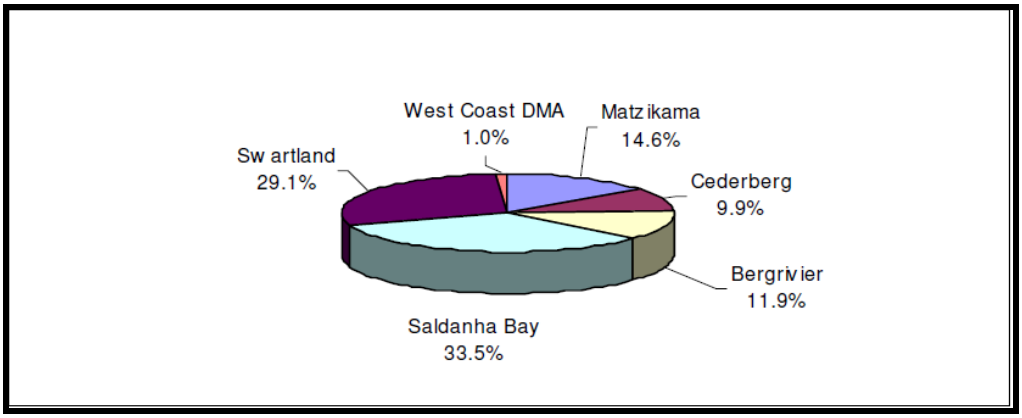
Figure 4.2: GDPR growth trends—West Coast districts and Western Cape, 1996 – 2004

In terms of economic activity, for the period 1995 and 2004 (Figure 4.3), the biggest change in contribution to GDPR was from the Wholesale & Retail; Catering & Accommodation sector, which increased from 12.7% to 16.1%. The Finance & Business Services sector also increased its share from 12.2% to 13.3%. In terms of contributions per local municipality, Saldanha Bay (33.5%) and Swartland (29.1%) municipalities made the largest contributions to the West Coast District's GDPR in 2004, while the Matzikama, Berg River and Cederberg LMs contributed 14.6%, 11.9% and and 9.9% respectively (Figure 4.4).



Source: Socio-economic Profile: West Coast District, 2006

Figure 4.3: West Coast District Municipality - Sectoral contribution to GDPR, 1995 and 2004



Source: Socio-economic Profile: West Coast District, 2006

Figure 4.4: Local municipality contribution to District's GDPR, 2004

The most important economic sectors within the WCDM in 2004 were Manufacturing (20.6%), Agriculture, Forestry & Fishing (19.4%), Wholesale & Retail Trade, and Catering & Accommodation (16.1%) and Finance & Business services (13.3%). The Mining (0.9%) and Construction (4.0%) sectors were relatively small (Socio-economic Profile: West Coast District, 2006). From a growth perspective, the WCDM grew at an average annual rate of 2.4% between 1995 and 2004. The fastest growing sector was Wholesale & Retail Trade; Catering & Accommodation that grew at an average annual rate of 5.1%. This was followed by Community, Social & Other Personal Services (4.1%), Transport & Communication (3.4%) and Finance & Business Services (3.4%) (Socio-economic Profile: West Coast District, 2006) (Table 4.1). Within the Manufacturing sector, the Food, Beverages & Tobacco sub-sector, which is closely linked to the agricultural sector, accounted for 41.7% per cent of the total.

Table 4.1: Sectoral growth, 1995 – 2004

Industry	GDPR 2004 (R million)	Contribution per sector 2004 (Percentage)	Average annual growth 1995-2004 (Percentage)	Average annual growth 2000-2004 (Percentage)	Growth 2003 – 2004 (Percentage)
Agriculture, forestry & fishing	1 093.2	19.4	2.9	2.1	2.5
Mining	53.0	0.9	-12.1	-3.1	1.3
Manufacturing	1 159.8	20.6	2.1	3.3	7.6
Electricity & water	105.9	1.9	2.8	3.4	5.7
Construction	227.4	4.0	0.9	1.9	2.0
Wholesale & retail trade; catering & accommodation	906.2	16.1	5.1	5.2	9.1
Transport & communication	515.3	9.2	3.4	2.7	1.0
Finance & business services	750.3	13.3	3.4	4.8	3.6
Community, social & other personal services	317.5	5.6	4.1	3.6	2.3
General government services	503.0	8.9	-1.0	0.4	0.2
Total	**5 631.6**	**100.0**	**2.4**	**3.1**	**4.3**

Source: Socio-economic Profile: West Coast District, 2006

In terms of sectors within each of the local municipalities, the most important contributors to GDPR within the Matzikama, Cederberg and Berg River LMs were mining in Matzikama (58.7%) and Agriculture, forestry and fishing in both the Cederberg (14.2%) and Berg River (20.5%) (Table 4.2).

Table 4.2: Local municipality sectors' contribution to West Coast District, 2004

Contribution percentage 2004	Saldanha Bay	Swartland	Matzikama	Bergriver	Cederberg	DMA
Agriculture, forestry & fishing	20.6	29.8	13.8	20.5	14.2	1.1
Mining	12.9	10.3	58.7	14.8	0.7	2.6
Manufacturing	47.9	29.4	9.3	7.2	6.0	0.3
Electricity & water	18.9	40.4	29.2	4.9	6.5	0.0
Construction	38.4	30.7	12.8	9.0	7.7	1.5
Wholesale & retail trade; catering & accommodation	30.7	26.7	16.1	11.3	14.2	1.0
Transport & communication	54.5	13.0	14.4	10.2	5.9	2.0
Finance & business services	24.4	44.0	12.8	10.0	8.6	0.2
Community, social & other personal services	36.4	26.0	20.4	3.8	9.9	3.6
General government services	26.3	25.6	18.3	17.6	10.9	1.2
Total	**33.5**	**29.1**	**14.6**	**11.9**	**9.9**	**1.0**

Source: Socio-economic Profile: West Coast District, 2006

The annual average growth rate for the Cederberg LM was 2.9% between 1995 and 2004. The annual growth rates for the Berg River and Matizikama LM over the same period were 0.3% and 1.3% respectively (Table 4.3). The average annual district growth between 1995 and 2004 was 2.4% (Socio-economic Profile: West Coast District, 2006).

Table 4.3: Local municipalities' growth rates, 1995 – 2004

	Average annual growth 1995 – 2004 (Percentage)
Saldanha Bay	2.6
Swartland	3.6
Matzikama	1.3
Berg River	0.3
Cederberg	2.9
DMA	1.3
District	2.4

Source: Socio-economic Profile: West Coast District, 2006

The Manufacturing (40.5%) and Agricultural (10%) sectors were the largest employers (Census 2001). However, the West Coast Socio-Economic Profile notes that these two labour-absorptive sectors only grew moderately in the period 1996 to 2001. The Agriculture sector grew at 2.9% and manufacturing at 2.1% (Socio-economic Profile: West Coast District, 2006).

The total municipal revenue for the West Coast District for the 2006/7 financial year was budgeted at R235,8 million, and is projected to grow at an average annual rate of 0,6 per cent in the medium term. Of significance ~ 97 % of own revenue was generated from the sale of water (Table 4.4) (Socio-economic Profile: West Coast District, 2006).

Table 4.4: Main sources of own revenue, 2005/09 –2008/09

R'000	Budget	Budget	Medium-term estimate		Growth	
	2005/2006	2006/2007	2007/2008	2008/2009	2005/2006-2006/2007	MTREF
Property rates	0.7%	0.6%	0.0%	0.0%	0.0%	-100.0%
Electricity	1.8%	1.7%	1.7%	1.7%	4.8%	6.0%
Water	96.9%	96.8%	97.4%	97.4%	7.9%	7.0%
Sanitation	0.0%	0.0%	0.0%	0.0%		
Refuse removal	0.7%	0.9%	0.9%	0.9%	52.2%	20.0%
Other	0.0%	0.0%	0.0%	0.0%		
Total	100.0%	100.0%	100.0%	100.0%	8.1%	6.9%

Source: Socio-economic Profile: West Coast District, 2006

4.3 DEMOGRAPHIC OVERVIEW

4.3.1 Population

Population projections predict a total population in the West Coast District of 320 929 in 2006. This is up from the 2001 population of 285 323 (CARE, 2005, population projections for all local municipalities in the Western Cape). Between 2001 and 2006 the average annual population growth rate was 2.38 %. The growth rate is projected to decline to 1.95 % between 2006 and 2010, with 346 760 projected for 2010. Most people in the West Coast District (2006) are Coloured (71%), while 17 per cent are White and 12 per cent African (Socio-economic Profile: West Coast District, 2006). The age profile for the WCDM reflects a relatively large proportion of middle-aged inhabitants, particularly in the 30 to 44 year age group, after which the number of people in older age groups decline rapidly. For 2006 the median age in the district is 27, with a dependency ratio[3] of 0.51. The dependency ratio is slowly on the decline and expected to decrease from 0.52 in 2001 to 0.50 in 2010 (Socio-economic Profile: West Coast District, 2006). The local municipalities of Saldanha Bay (25.3%) and Swartland (23.8%) accounted for the largest percentage of the districts total population in 2006. The 2006 population numbers for the Matzikama, Cederberg and Berg River LMs were 58 840 (18%), 45 301 (14%) and 54 568 (17%) respectively (Socio-economic Profile: West Coast District, 2006). The three LM in which the majority of the Olifants/Doorn WMA is located, therefore make up ~ 50% of the total population of the WCDM (Table 4.5).

[3] The dependency ratio is calculated as the number of 0-14-year-olds plus the number of 65-year-olds and older, divided by the number of people in the 15-64-year-old age group. This is to give a rough indication of dependency, but it should be noted that it is not linked to the labour force or income earners (including those of pensionable age who have access to social or private pensions or other income).

Table 4.5: Population projections by municipal area

	District	Matzikama	Cederberg	Bergriver	Saldanha Bay	Swartland	DMA
2001	**285 323**	50 088	39 563	48 076	71 341	72 370	3 884
2006	**320 929**	58 840	45 301	54 568	81 121	76 225	4 873
2010	**346 760**	64 995	49 680	60 292	88 656	77 897	5 239

Source: Centre for Actuarial Research (CARE), 2005

In 2001 the majority of the population (~70) lived in urban settlements, while the remaining 30% lived in the rural areas. There were substantial differences between local municipalities within the DM. In this regard the majority (51.2%) of the households in the Cederberg LM were rural. The percentages for the Matzikama and Bergriver were both 39.3% (Table 4.6).

Table 4.6: Rural and urban households, 2001

	Total number of households	Number of rural households	Rural households (Percentage)	Rural house-holds as percentage of province	Number of urban households	Urban households (Percentage)	Urban households as a percentage of province
West Coast District	**73 444**	22 115	30.1	20.5	51 329	69.9	4.82
Matzikama	**14 090**	5 535	39.3	25.0	8 555	60.7	16.7
Cederberg	**10 366**	5 303	51.2	24.0	5 063	48.8	9.9
Berg River	**11 707**	4 601	39.3	20.8	7 106	60.7	13.8
Saldanha Bay	**18 703**	1 050	5.6	4.8	17 653	94.4	34.4
Swartland	**17 402**	5 018	28.8	22.7	12 384	71.2	24.1
DMA	**1 176**	608	51.7	2.8	568	48.3	1.1

Source: Socio-economic Profile: West Coast District, 2006

4.3.2 Education

Based on the 2001 Census data, approximately 29 % of the population aged 14 and older had less than 7 years of formal education in 2001 and were considered to be illiterate[4]. The figures for the Matzikama, Cederberg and Berg River LMs were 31%, 34% and 30% respectively (Table 4.7). This reflects the high percentage of rural households and the dominant role played by agriculture in these three local municipalities. However, overall the West Coast District does not compare well with other districts in the Western Cape. In the Western Cape ~ 6 % of the total

[4] In the South African context, having obtained a primary qualification (i.e. having successfully passed Grade 7) is generally held as the absolute minimum requirement for functional literacy/ numeracy. The National Department of Education's ABET (Adult Basic Education and Training) programme provides education and training up to the equivalent of Grade 9. In this more onerous definition, Grade 9 is required as the minimum qualification for having obtained a basic education (www.abet.co.za).

population had no education, while the corresponding figure for the WCDM was ~ 9%. At the higher education levels, 11.2% of the population of the Western Cape had a higher education, while the figure for the WCDM was 6.8 %.

Table 4.7: Education levels

Education							
	District	Matzikama	Cederberg	Bergriver	Saldanha	Swartland	DMA
Percentage of people older than 14 years illiterate	29	31	34	30	21	31	34
Learner-educator ratio	37	36	36	37	38	37	
Number of schools (High and primary)	133	26	24	24	19	40	

Source: Western Cape Education Department, 2005

4.3.3 Employment

The WCDM had the lowest unemployment rate in the Western Cape in 2001[5]. The provincial average in 2001 was 13.8%. In 2001 the labour force of the West Coast represented roughly 44 % of its total population. The district's working-age population (people between the ages of 15 and 64) was estimated at 212 676, or 66.3 % of its total population in 2006. This is expected to grow at a rate of 2.02 % per annum over the next four years, reaching 240 422 in 2010 (Socio-economic Profile: West Coast District, 2006).

In terms of education levels, 71% of those employed in the WCDM had incomplete secondary education or less. This is reflection of the dominant role played by the agriculture, forestry & fishing in terms of employment. The biggest employer in the West Coast District was the Agriculture, Hunting, Forestry & Fishing sector, employing 43 454 or 40.5 %, followed by Community, Social & Personal Services (12.2% or 13 043 workers), Wholesale & Retail Trade (10.7% or 11 488 workers) and Manufacturing (10.2% or 10 902 workers) (Socio-economic Profile: West Coast District, 2006).

The skills profile of the district is disproportionate across the local municipalities. Saldanha Bay has the largest proportion of highly skilled and skill-employed people (combined total of 68%), while the Cederberg (64.5%) and Bergriver (59.3%) LMs have large proportions of low-skilled workers.

4.3.4 Household income

Household income in the West Coast District is concentrated in the middle-to-low income categories. In terms of income, 6.6 % of households have no income, 26.4 % earn between R1 and R800[6] per month and 42.9 % between R801 and R3 200.

[5] Census 2001 official definition of *an unemployed person*: "A person between the ages of 15 and 65 with responses as follows: 'No, did not have work'; 'Could not find work'; 'Have taken active steps to find employment'; 'Could start within one week, if offered work'." (www.statssa.gov.za).

[6] R800 per month represents the accepted South African poverty line. Households that earn R800 per month or less are classified as falling below the poverty line.

Therefore, ~ 34% of the households in the WCDM fall below the poverty line. Whites dominate the high-income categories. Female-headed households account for 29.2 % of all households, with 23.3 % of the heads of these households being 60 years or older, which makes the household head eligible for old-age pension (Socio-economic Profile: West Coast District, 2006). Despite having access to social security grants, the female headed households, specifically those headed by women 60 years and older, represent a significant vulnerable group. Households headed by those aged 15-19 years make up 1.2% of the total number of households.

The average number of grants paid monthly during 2005 in the West Coast District was 2 396. The largest proportions of recipients were those who received child support (39.8%) and old-age (29.3%) and disability grants (24%).

SECTION 5: OVERVIEW OF MATZIKAMA LOCAL MUNICIPAL AREA

5.1 INTRODUCTION

The Matzikama LM is a category B municipality located in the northern part of the WCDM and is bordered by the Atlantic Ocean to the west, the Northern Cape Province to the east and other West Coast municipal areas to the north (District Management Area) and south (Cederberg).

The area is characterised by an arid environment, served by a life-giving arterial namely the Olifants River. The river, with its associated canal systems, supports a flourishing agricultural sector that is largely based on viniculture (the cultivation of grapes for wine production). The majority of the farming activities in the region are concentrated along the river. The majority of the population of Matzikama LM are therefore also concentrated along the river. Only the villages of Vanrhynsdorp and the coastal towns of Doringbaai and Strandfontein are not linked to the river. Vredendal is the largest town in the area and it is also centrally located, rendering it the logical economic and administrative centre. Vanrhynsdorp, Klawer and Lutzville can be regarded as secondary towns with established business districts. Ebenhaeser is a small mission town close to the river mouth, while the small settlement of Papendorp is located at the mouth of the Olifants River. The dominant economic activities in the area are:

- Agriculture (orchards, fruit, vegetables, livestock);
- Processing of agricultural products (e.g., viniculture);
- Mining (e.g. Namaqua Sands diamonds);
- fishing industry;
- Tourism (especially during the flower/floral season)

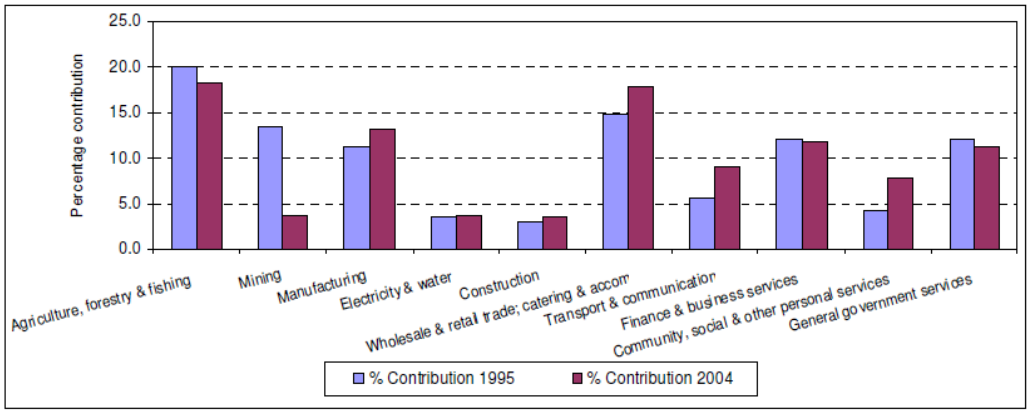
5.2 ECONOMIC OVERVIEW

The Matzikama LM's economic activity is spread across a number of sectors led by Agriculture, Forestry & Fishing (18.3%), Wholesale & Retail Trade; Catering & Accommodation (17.7%), and Manufacturing (13.1%), followed by Finance & Business Services (11,7%) and General Government Services (11.2%). Together, these sectors contributed about 72 % of Matzikama's economic output in 2004 (Figure 5.1) (Socio-economic Profile: West Coast District, 2006).

Between 1995 and 2004, the largest proportional increases were in the Community, Social & Personal Services (3.7%), Transport & Communication (3.3%) and Wholesale & Retail; Catering & Accommodation sectors (2.9%). The sectors showing the greatest proportional losses over this period were Mining (9.6%) and Agriculture, Forestry & Fishing (1.7%). The fastest growing sectors in Matzikama were the Community, Social & Personal Services sector (8.6%) and the Transport & Communication sector (6.6%) over the ten-year period 1995 to 2004. These were

followed by Wholesale & Retail Trade; Catering & Accommodation (3.3%), Construction (3.2%) and Manufacturing (3%). The average annual growth between 1995 and 2004 was only 1.3 % (Socio-economic Profile: West Coast District, 2006).

Figure 5.1: Matzikama Municipality - Sectoral contribution to the GDPR, 1995 and 2004



Total municipal revenue for Matzikama Municipality for the 2006/2007 financial year was budgeted at R122.7 million. Own revenue constitutes the largest part of the total (R52.9 million or 43%). Own revenue is derived mainly from electricity (45,4%) and property rates (21.8%) for the 2006/2007 financial year. Other sources of income are water (14.2%), sanitation (11.9%) and refuse removal (6.7%) (Socio-economic Profile: West Coast District, 2006).

5.2.1 Agriculture, forestry and fishing sector

The agriculture, forestry and fishing sector is the largest economic sector in Matzikama and contributed R150.5 million (18.3%) to the Matzikama's GDPR in 2004. The majority of this is linked to intensive farming activities, such as vineyards and tomatoes, concentrated along the Olifants River. On average, the growth in the agricultural sector has been low, with a growth rate of 0.3 % per annum between 1995 and 2004. The average growth rate was negative at -0.6 % between 2000 and 2004, indicating a decline in economic activity. This is cause for concern given the importance of the sector to both the local and the regional economy (Socio-economic Profile: West Coast District, 2006).

5.2.2 Wholesale and retail trade; catering and accommodation

In 2004 this sector was the second largest contributor to economic growth, with a contribution of R146 million (17.7%) to the GDPR. The average annual growth for this sector was 3.3 % over a 9-year period ending in 2004. Growth between 2000 and 2004 was relatively unchanged at 3.2%, although growth picked up on a year-on-year basis at 4.3% for 2003 and 6.9 % for 2004 (Socio-economic Profile: West Coast District, 2006). The growth in the local tourism sector has contributed to this increase.

5.2.3 Manufacturing sector

The manufacturing sector was the third most important sector in 2004 and contributed R107.9 (13.1%) to the Matzikama GDRP. The manufacturing sector in the region is dominated by the food, beverages and tobacco subsector, which accounted for 67.1% of the total for 2004. The concentration in the subsector is closely linked to the strong agricultural activities within the region. Growth in the manufacturing sector as a whole was relatively strong between 1995 and 2004 with 3% average annual growth. The average annual performance between 2000 and 2004 also remained above the 3% mark. However, year-on-year growth in this sector has been fairly erratic, with growth rates of 9.1% in 2004 and negative -4.6 % in 2003 (Socio-economic Profile: West Coast District, 2006).

5.3 DEMOGRAPHIC OVERVIEW

5.3.1 Population

Matzikama's population projection for 2006 was 58 840, which represents 18.3% of the total population of the WCDM. Between 2001 and 2006 the population increased from 50 088 to 58 840. This represented an annual average growth rate of 3.3%. Population growth is expected to slow down to an average annual rate of 2.5 % between 2006 and 2010 (Socio-economic Profile: West Coast District, 2006). The projected population in 2010 is estimated to be 64 995. The municipality's population is predominantly Coloured (74%), while the White population comprises 19% cent and the African population 7% of the total in 2006. In 2001 Matzikama municipality had 14 090 households under its jurisdiction, of which 39.3% were rural. This is significantly higher than the 30.1% figure for the WCDM West Coast District's (Socio-economic Profile: West Coast District, 2006).

The population pyramid of the Matzikama population in 2006 had a broad base, which indicated a large young population with a median age of 28. The 20 to 24-year age group is much smaller, with larger population numbers between 25 and 35 years. This indicates an out-migration in this age group, which could relate to a scarcity of job opportunities or limited access to institutions of higher learning.The dependency ratio in 2006 is 0.50, down from 0.52 in 2001, and is projected to decline even further to 0.49 later in 2006 (Socio-economic Profile: West Coast District, 2006).

The relevant towns in the Matzikama LM include Vredendal, Ebenaeser, Papendorp, Lutzville and Lutzville Wes, Koekenaap, Klawer and Vanrhysdorp. With the exception of Vanrhysdorp all of the towns are located on or in close proximity to the Olifants River. A short description of each town is provided below. The percentage contribution to the total population of the Matzikama LM is illustrated in Figure 5.2.

Vredendal
Vredendal is the largest and most developed town in the area and is also centrally located rendering it the logical economic and administrative centre. The town is located 24 km east of Vanrhynsdorp on the West Coast Tourism Route. The town serves as a major service centre for the agricultural sector, specifically the farming activities that are located along the Olifants River. These services include support, manufacturing and processing services.

Ebenaeser and Papendorp
The villages are located near the mouth of the Olifants and developed from a mission station founded by the Rynse Church in 1831. The villages have virtually no intrinsic economic base and limited growth potential. Basic infrastructure such as houses, roads (mainly gravel), electricity, sanitation and water are available and the municipality provides support to the emerging farmers from the area. Due to their location near the mount of the Olifants, aquaponics (integration of fresh water aquaculture and hydroponics) and tourism have been identified as potential growth opportunities. However, the education and skills levels, as in most of the other areas in the Matzikama LM, are low and this is likely to hinder future development in these villages.

Lutzville
Lutzville is located ~48 km west of Vanrhynsdorp on the West Coast Tourism Route. The economic activities in the town are largely associated with the Namaqua Sands mine and the large number of irrigation farms in the area. In this regard the majority of workers that work at the Namaqua Sands Heavy Mineral sands mine, which is located to the north of Lutzville, live in the town. The town also hosts and annual agriculture expo and attracts visitors during the spring wild flower season.

Lutzville Wes
Lutzville Wes is located ~18 km west of Vredendal and 2 km south of Lutzville functions as a residential settlement that houses mainly seasonal and, to a lesser extent, permanent farm workers employed on the surrounding farms. Its central location to Vredendal, Lutzville and surrounding farms contributes to its functional role as a low-order rural settlement.

Koekenaap
Koekenaap is located ~ 56km west of Vanrhynsdorp on the West Coast Tourism Route and functions as a low order residential settlement that houses mainly farm workers employed on the large number of surrounding farms. Koekenaap originally developed from the farm Roodeheuwel and the development of the area was linked to the provision of irrigation in 1923. The sharp increase in the population of Koekenaap in recent years is largely linked to the influx of farm workers and their families in search of work. However, besides the farms in the area there are limited employment and economic opportunities within the village of Koekenaap itself.

Klawer
The town is located ~ 22 km south of Vanrhyndorp on the Cape Namib tourism route and developed from a railway crossing between Cape Town and Bitterfontein. With the reduction in rail transport the agriculture sector and services industry have played an increasingly important role in the town's economy. Tourism is also a growing activity in the area, with a growing number of tourists participating in agri-tours presented by the Kapel Farm in the area.

Vanrhysdorp
Vanrhynsdorp is the most southern and oldest town in Namaqualand and was established in 1661. The town is located 300 km north of Cape Town on the intersection to Cape Namibia, Namakwari, and West Coat Karoo tourism routes. The towns economic activities are linked to servicing the agricultural sector and tourism, specifically tourism linked to the spring wild flower season.

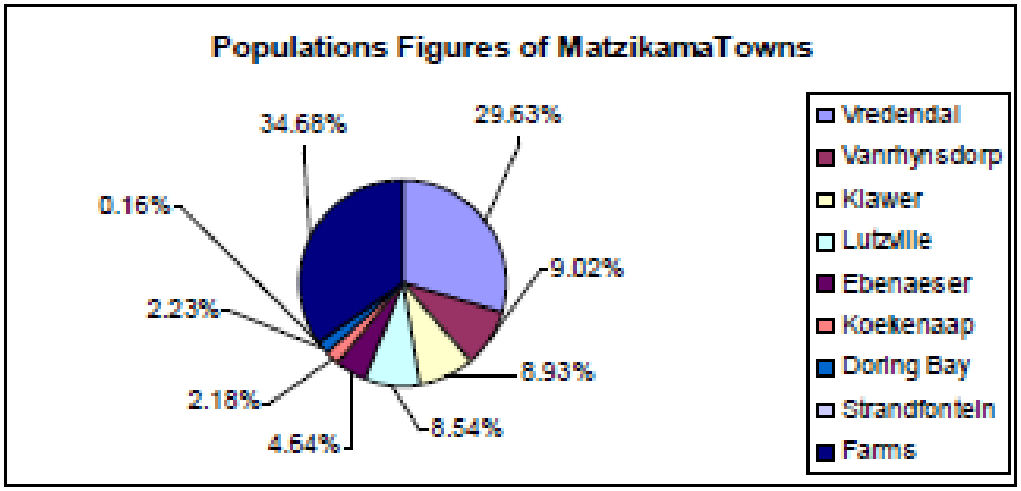


Figure 5.2: Percentage population figures for towns in Matzikama LM

5.3.2 Employment

The unemployment rate in 2001 was 15.8%, higher than the district figure of 13.8%, but is significantly lower than the national average of 33.8%. Between 1996 and 2001 unemployment increased to about 16%.

The Matzikama Municipality's working-age population (people between the ages of 15 and 64) was estimated at 39 305, or 66.8% of its total population in 2006. This is expected to grow at a rate of 2.6% per year over the next four years, reaching 43 587 in 2010. Between 1996 and 2001 labour force participation remained fairly stable at around 68%. During this period the number of people employed increased by 3 765 and unemployed increased by 1 724. Employment increased from 14 940 people in 1996 to 18 705 in 2001 (at 4.6 a year), while the number of the unemployed rose from 1 787 to 3 511 or 14,5 per cent a year over the same period, as the number of work-seekers increased at a significantly faster rate than the local economy's ability to create jobs. Although there was an increase in the number of the employed, the unemployment rate grew from 10.7% to 15.8% during this period. In Matzikama females, Africans, young people and those with lower levels of formal education — especially those with incomplete secondary education — are highly affected by unemployment. Youth unemployment is particularly high, with 70 per cent of the unemployed being between the ages of 15 and 34 (Socio-economic Profile: West Coast District, 2006).

In terms of sectors, the Agriculture, Forestry and Fishing sector accounted for 42.5% of all jobs in the municipality in 2001. However, the figure masks the seasonal nature of job creation in the sector. The Wholesale and Retail Trade and Community, Social and Personal Services sectors followed with roughly 10%. Together these three sectors accounted for 64% of total employment in the Matzikama LM (Socio-economic Profile: West Coast District, 2006).

5.3.3 Household income

Household income is concentrated in the lower middle-income categories, with the bulk of the households sourcing an income of between R4 800 and R76 800 per annum (R400 – R6 400 per month). In proportion to their population size, whites dominate the upper-income categories. Of the total number of households, 5,6 per cent have no income, with an additional 3.96 % only being able to attain an annual income of less than R4 800 (less than R400 per month). About 30% of households are headed by females, and 7.1% are headed by persons aged between 15-24 years (Socio-economic Profile: West Coast District, 2006). These households represent potentially vulnerable households.

5.3.4 Education and skills

Approximately 31% of the population over 14 years of age had less than 7 years formal education, which qualifies them as being illiterate. When comparing Matzikama to the West Coast district, Matzikama had a slightly smaller proportion of people with higher education levels. About 23.2% of the people had attained a minimum of Grade 12 compared to the district's 25.2%. When correlating education and skills, the poor education attainment levels can also be observed in the proportion of persons in low-skill occupations. In 2001 ~ 56% of Matzikama's employed people could be classified as low-skilled (when skill is grouped by occupation), with the skilled making up 32%. Low-skill occupations represented 12% of employment.

5.4 MEASURE OF WELL BEING

The West Coast Socio-Economic Profile (2006) refers to three indicators of well-being, namely the Human Development Index (HDI), the City Development Index (CDI) and the Provincial Index of Multiple Deprivation (PIMD). The Human Development Index (HDI) is a composite measure that provides information on the human development performance of a region. It is an average of health, education, income and infrastructure indicators. The City Development Index (CDI) is a poverty measurement tool similar to the HDI, but designed to reflect a municipality's investment path.

When compared to the results for the Western Cape, HDI and CDI for Matzikama are similar to those of other local municipalities within the district. When comparing the HDI and CDI of Matzikama to the province, the there is a significant difference in the CDI (Table 5.1). The 10 point difference, 0.81 for the Western Cape compared to 0.71 of the municipality, can largely be attributed to the poor performance in infrastructure (0.70) and waste (0.61) development compared to the Western Cape. These figures highlight infrastructure and waste as development priorities for the municipality (Socio-economic Profile: West Coast District, 2006).

Based on the Provincial Index of Multiple Deprivation (PIMD), the wards of Matzikama are comparatively more deprived than other wards in the Western Cape. All the wards fall within the most deprived wards in the Western Cape. Matzikama also fared poorly on individual ward level on the health deprivation indicator. On the whole Matzikama wards performed poorly with the provincial comparison (Socio-economic Profile: West Coast District, 2006).

Table 5.1: Human and City Development Indices and component scores

	Matzikama Municipality	Western Cape Province
HDI	**0.71**	**0.72**
Health	0.68	0.63
Income	0.77	0.84
Education	0.69	0.68
CDI	**0.71**	**0.81**
Infrastructure	0.70	0.79
Waste	0.61	0.89
Health	0.70	0.68
Education	0.75	0.86
Income	0.77	0.82

Source: Socio-economic Profile: West Coast District, 2006

In terms of housing backlogs, according to Census 2001, Matzikama Municipality had close to 14 465 housing units, of which approximately 90% were brick structures. Informal housing comprised only 10% cent of all housing units. In 2001 the housing backlog for Matzikama was 1 366, but declined to 700 in 2004. Between 1994 and 2004, 2 062 units were built. The current housing backlog is estimated to range between 2 600 and 4 000 units, with Vanrhynsdorp and Vredendal targeted for the construction of 1 500 units.

5.5 KEY DEVELOPMENT CHALLENGES

The Matzikama IDP 2009/2010 and LED strategy identifies a number of potential challenges facing the area. The challenges that have a potential bearing in the WRCS for the Olifants/Doorn WMA include:

- The lack of skills and training facilities in our communities are contributing largely to poorly developed economies particularly in terms of Black Economic Empowerment;
- The lack of project development aid for the local communities and the impact that his has on Black Economic Empowerment. In this regard the IDP notes that the role of the West Coast District Municipality is very limited in supporting the local municipalities in regards to local economic development;
- Limited community ownership in local projects;
- Lack of leadership, expertise and access to funding in local communities. Successful economic development is a function of well-established industrial bodies such as Emerging Farmers, Women in Construction, Fishing and Aquaculture, Commercials Farmers etc. Due to the lack of leadership, expertise, access to funding etc. it is difficult for existing organisations to prosper and for new organisations to become established;
- The need for a land development plan for the Matzikama LM to guide and support economic development. The development of land development plan for all land in the Matzikama municipal area identified as a key priority.
- Global warming and climate change;
- An increasing influx of people from other provinces and thus a consequential increase in the number of informal settlements (Lutzville, Vredendal and Klawer);

- A large housing backlog as proven by the long waiting lists;
- Absence of a clear infrastructure development plan;
- Insufficient suitable land for housing and small farmer development

The risk of global warming, which is likely to impact the Western Cape, poses a threat to the local agricultural and tourism sector. Climate change and its consequences (such as reduced water supply and increases in temperature) have been identified as serious challenges to the local economy. As a result of climate change there is likely to be an increase in the severity and unpredictability of weather patterns. Flooding and storms are predicted which could have a devastating impact on agricultural production.

The impact of climate change is likely to affect species in the internationally recognised biodiversity hotspots, the Fynbos and Succulent Karoo Biomes. The ability to make projections is limited by a high level of uncertainty, since the level of understanding of tolerance is not known. Climate change therefore also poses a threat to the tourism sector. Eco-tourism is one of the fastest growing sectors of the Western Cape economy. Estuaries, which need fresh water for flushing and maintaining salinity profiles will face increased competition for water. This is as a result of human pressures through abusive land use patterns in catchments areas and urban demands. The impacts associated with climate change will therefore be felt across all sectors of the economy.

Floods have been identified as one of the threats associated with climate change in the Western Cape. The IDP indicates that the proposed raising of the wall of Clanwilliam Dam is one way of mitigating the effects of future floods. Preliminary analysis indicates that this will benefit small farmers along the entire length of the river towards Matzikama. The raising of the dam wall also promises to attract more visitors and tourists to the area. Growth in several sectors is thus likely to be stimulated by this development (agriculture, tourism).

In terms of potential initiatives there are a number of initiatives that have a bearing on the WRCS. These include:

- Development of the coastal area and rivers for tourism and recreation;
- Marketing Matzikama - both from the point of view of tourism and investors;
- Support of small farmer development programmes
- Aquaculture development, both marine and freshwater. The development of an Aquaculture strategy is seen as a key priority for implementing aquaculture projects with community involvement in the full value chain of the business;

SECTION 6: OVERVIEW OF CEDERBERG LOCAL MUNICIPAL AREA

6.1 INTRODUCTION

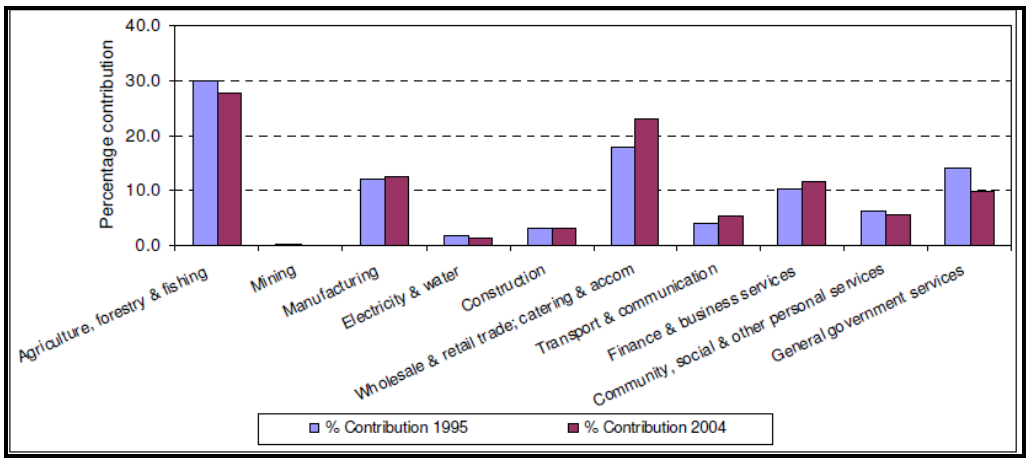
The Cederberg Municipality LM is a Category B municipality located between Matzikama Municipality (north), Bergriver Municipality (south), the Atlantic Ocean (west), Cape Winelands District Municipality and the Northern Cape Province (east). The municipality covers an area of 7 339 km² and the main towns include Clanwilliam, Citrusdal, Lamberts Bay, Graafwater, Elands Bay, Wupperthal and Leipoldtville.

The Cederberg municipal area has a very low population density of 5.3 people per km². The urban rural ratio of households indicates that about 51.2% of the inhabitants of the municipal area do not reside in urban settlements but mainly on farms with a subsequent dispersed settlement pattern. This urban/ rural ratio is unique for the Western Cape in that more people reside in the rural areas within the municipal area as does in urban settlements.

6.2 ECONOMIC OVERVIEW

The GDPR for 2004 was R558.4 million, with Agriculture, Forestry & Fishing (27.7%), followed by Wholesale & Retail trade; Catering & Accommodation (23.0%), Manufacturing (12.4%), and Financial & Business services (11.6%) constituting the main economic sectors (Figure 6.1). These four sectors collectively contributed 74.7% to Cederberg LMs economic output in 2004. The largest proportional increase occurred in the Wholesale & Retail trade sector; Catering & Accommodation (5.2%) and the Financial & Business Services (1.39%) sectors (Socio-economic Profile: West Coast District, 2006).

The fastest growing sectors between 1995 and 2004 were Transport & Communication (6.2%), Wholesale & Retail trade; Catering & Accommodation (5.8%), and Financial & Business services (4.3%). With the exception of Mining, the General Government Services (2.0%) and Electricity & Water (1.2%) sectors declined between 1995 and 2004. In 2004, the annual growth of the Wholesale & Retail trade, Catering & Accommodation sector climbed to 9.9 per cent compared to 9.1 per cent for the district. Similarly, the annual growth in Manufacturing accelerated to 9.2 per cent in the same year (Socio-economic Profile: West Coast District, 2006).

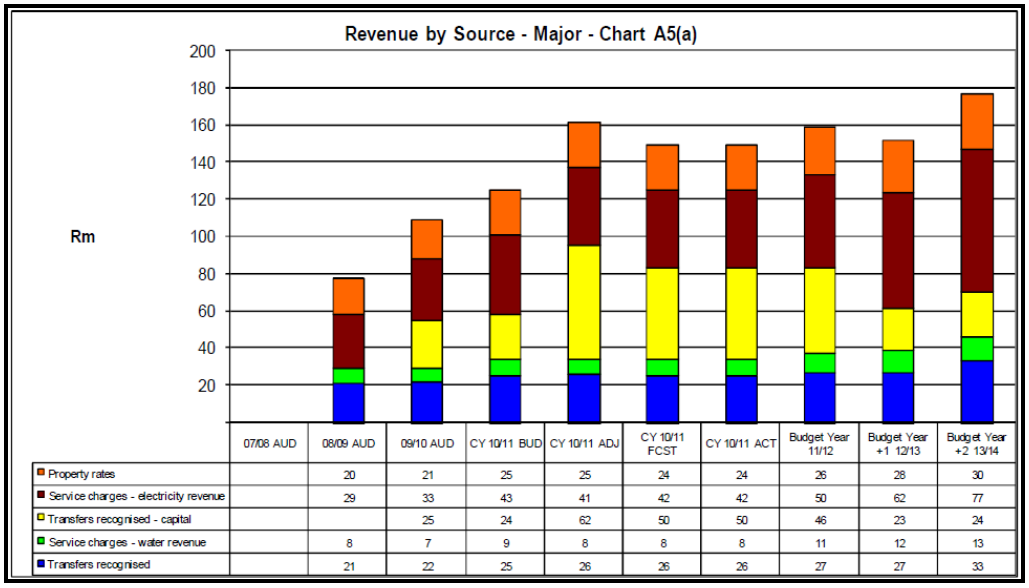


Source: Socio-economic Profile: West Coast District, 2006.

Figure 6.1: Cederberg sectoral contribution to the GDPR, 1995 and 2004

Own revenue in Cederberg is mainly obtained from electricity and property rates. For the 2006/2007 financial year the proportions were 39.7 % (electricity) and 32.4 % (Property rates). Other sources of income are water (12.8%), sanitation (8.0%) and refuse removal (7.0%) (Socio-economic Profile: West Coast District, 2006).

The Municipal budget for 2011/2012 is R226.4 million. Figure 6.2 illustrates the contribution of water sales to total revenue. On average the revenue generated from the sale of water is in the region of 10% of total revenue.



	07/08 AUD	08/09 AUD	09/10 AUD	CY 10/11 BUD	CY 10/11 ADJ	CY 10/11 FCST	CY 10/11 ACT	Budget Year 11/12	Budget Year +1 12/13	Budget Year +2 13/14
Property rates		20	21	25	25	24	24	26	28	30
Service charges - electricity revenue		29	33	43	41	42	42	50	62	77
Transfers recognised - capital			25	24	62	50	50	46	23	24
Service charges - water revenue		8	7	9	8	8	8	11	12	13
Transfers recognised		21	22	25	26	26	26	27	27	33

Figure 6.2: Revenue sources for Cederberg LM

6.2.1 Agriculture, forestry and fishing sector

The Agriculture, forestry & Fishing sector is the largest sector in the municipality, contributing 27.7% (R154.8 million) to the total GDPR in the area. The sector includes diversified farming activities such as plantation, citrus, winery, rooibos and fishing activities. Between 1995 and 2004, the sector grew at a relatively slower average annual rate of 2.0%, declining to 1.6% between 2003 and 2004 (Socio-economic Profile: West Coast District, 2006).

6.2.2 Manufacturing sector

The Manufacturing sector was the third largest sector in 2004, and accounted for 12.4% of the total GDPR. The largest subsector within Manufacturing was the Food, Beverages and Tobacco which accounted for 61.2% of total manufacturing in 2004. This highlights the strong links between the manufacturing and agricultural sectors. The extent of concentration is largely driven by agricultural activity that is dominant in the region. Other large subsectors in 2004 were Furniture and Other Manufacturing (13.6%) and Wood and Paper, Publishing and Printing (11.96%). Average annual growth in the Manufacturing sector was 3% per cent between 1995 and 2004. Growth increased slightly between 2000 and 2004 to 3.5% (Socio-economic Profile: West Coast District, 2006).

6.3 DEMOGRAPHIC OVERVIEW

6.3.1 Population

The total population of the LM in 2001 was estimated to be 39 326. Of this total 30 672 (78%) were classified as Coloureds, 5 420 (14%) Whites and 3 204 (8%) Black African (Cederberg IDP, 2011/2012). The total population decreased to 31 944 in 2007 and is predicted to decline to 28 429 in 2010. The information contained in the Cederberg IDP contradicts the information contained in the West Coast District Socio-Economic Profile (2006), which indicates that the population between 2001 and 2006 increased from 39 563 to 45 301, at an average rate of 2.75 % a year. The West Coast Profile report indicates that the local population is expected to grow at a rate of 2.33 % a year between 2006 and 2010, reaching total population of 49 680 by 2010. This total is almost double the figure of 28 429 reflected in the Cederberg IDP (2011/2012). This is an issue of concern as it will impact on water resource requirements.

The IDP notes that between 2001 and 2007, the racial composition of Cederberg Municipality experienced some small but significant changes in the proportional representation of the African and White population groups. In terms of composition, the percentage of Coloureds has essentially remained the same. However, the percentage of Black African's has decreased to ~ 4 %, while the percentage of Whites has increased to ~ 17.5% (Table 6.1).

In terms of rural-urban split, ~ 51% of the households are rural with the remaining 49% being located in the urban settlements. The percentage of rural households is significantly higher than the average for the WCDM, which is ~30%.

Table 6.1: Breakdown of Cederberg LM population

Population Group	2001	% of Population 2001	2007	% of Population 2007
African	3 204	8.1	1 246	3.9
Coloured	30 672	78	25 076	78.5
Indian or Asian	30	0.1	32	0
White	5 420	13.8	5 590	17.5
Total	39 326	100	31 944	100

Source: Cederberg IDP (2011/2012)

6.3.2 Employment

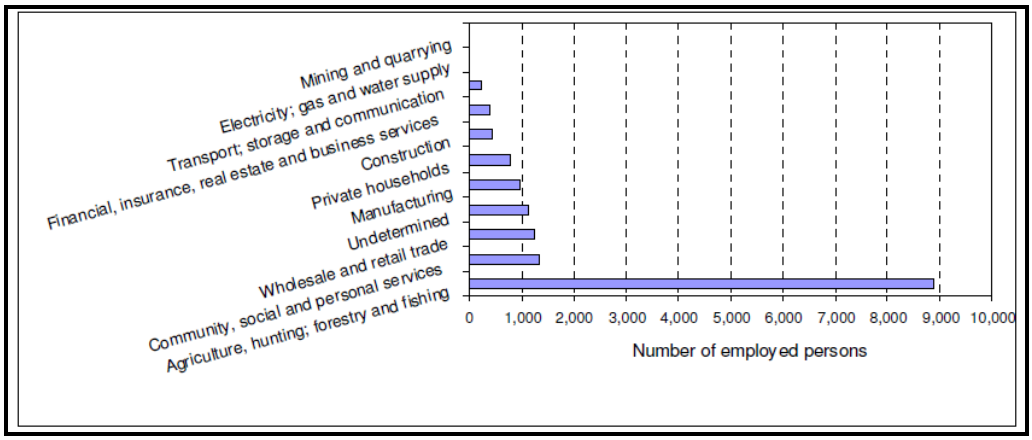
The unemployment rate in 2001 was 10.2 %. Between 2001 and 2007 the proportion of people wanting to actively participate in the labour market fell from 72.2 to 70.3%; as the number of labour force participants decreased from 18 616 to 14 655. Over the same period, the unemployment rate decreased from 16.7 to 9.2% (Table 4.2).

Table 4.2: Employment data Cederberg LM

	Total population aged 15-65	Labour fource	LF as a % of PR	Employed	Unemployed	Unemployment rate %
2007	20 844	14 655	70.3	13 309	1 346	9.2
2001	25 790	18 616	72.2	15 503	3 113	16.7

Source: Cederberg IDP (2011/2012)

In 2001 the predominant employer in the Cederberg LM was the Agricultural, Fishing & Forestry sector, which accounted for 57.2% of the total employment. However, the seasonal nature of work in this sector masks the true trend of employment rates and therefore the underlying income trends of communities. Other significant employers were the Community, Social & Personal Services sector (8.7%) and the Wholesale & Retail trade (8.1%) sector (Figure 6.3).



Source: Socio-economic Profile: West Coast District, 2006.
Figure 6.3: Employment by sector, 2001

The West Coast Socio-Economic Profile (2006) indicates that the Cederberg's working-age population5 (15 and 64 years of age) was estimated at 29 561 or 65.3% of the total population in 2006. This is expected to grow at a rate of 2.5% per year over the next four years, reaching 32 686 in 2010. These figures do however need to treated with caution given the significant discrepancies in projected population numbers between 2006 West Coast Profile and the Cederberg IDP (2011/2012).

6.3.3 Household income

Household income in Cederberg is concentrated in the lower-middle income groups, with the majority (69.4%) of the households earning a monthly income of between R400 and R3 200. An additional 10.8 % of all households earned less than that – R0 to R400 a month. Female-headed households make up approximately 27% of all households and nearly 7% of all households are headed by young people between the ages of 15 and 24. These households are likely to be more vulnerable, and often have lower incomes (Socio-economic Profile: West Coast District, 2006).

In terms of skills levels, in 2001 ~ 56% of the employed people in the Cederberg LM could be classified as low-skilled, with the skilled making up 26.2% (Socio-economic Profile: West Coast District, 2006).

6.4 MEASURE OF WELL BEING

The West Coast Socio-Economic Profile (2006) refers to three indicators of well-being, namely the Human Development Index (HDI), the City Development Index (CDI) and the Provincial Index of Multiple Deprivation (PIMD). The Human Development Index (HDI) is a composite measure that provides information on the human development performance of a region. It is an average of health, education, income and infrastructure indicators. The City Development Index (CDI) is a poverty measurement tool similar to the HDI, but designed to reflect a municipality's investment path.

When compared to the results for the Western Cape, the HDI (0.67) and CDI (0.68) index for the Cederberg compared poorly with the provincial indexes of 0.72 and 0.81 respectively. The education and income scores for both the HDI and CDI are particularly low when compared with the province, although the local municipality scored higher on health measures (Table 6.3). The waste (0.52) and infrastructure (0.68) components of the CDI were also below the figures for the provinces, namely 0.89 and 0.79 respectively. According to the Provincial Index of Multiple Deprivation (PIMD) there is some evidence of deprivation as seen in some wards in the Cederberg area. Of all wards in the Cederberg area, 67% fell within the most deprived wards in the Western Cape. Overall, the Cederberg wards performed poorly relative to the provincial levels (Socio-economic Profile: West Coast District, 2006).

	Cederberg Municipality	Western Cape Province
HDI (and components below)	**0.67**	**0.72**
Health	0.67	0.63
Income	0.72	0.84
Education	0.63	0.68
CDI (and components below)	**0.68**	**0.81**
Infrastructure	0.68	0.79
Waste	0.52	0.89
Health	0.69	0.68
Education	0.78	0.86
Income	0.72	0.82

Source: Socio-economic Profile: West Coast District, 2006.

Table 6.3: Human and City Development Indices and component scores

According to Census 2001, the Cederberg LM had an estimated 11 181 housing units of which 93,5 per cent were formal structures, while informal housing comprises only 6,5 per cent of all housing units. The housing backlog in the Cederberg LM was 670 in 2001 and remained unchanged in 2004. Between 1994 and 2004 a total of 940 housing units were built. The municipality has expressed the need for low income housing and for land development for middle-income housing (Socio-economic Profile: West Coast District, 2006).

The IDP (2011/2012) indicates that the total number of households in the Cederberg LM with access to clean potable water increased from ~ 67% in 2001 to 87% in 2007. The only areas where people do not have access to potable water near their dwellings is in the rural areas. In terms of sanitation, the percentage of households that had access to a flush toilet (either connected to a sewage system or a septic tank) increased from ~80% in 2001 to 89% in 2007.

6.5 KEY DEVELOPMENT CHALLENGES

The IDP identifies a number of project and or challenges facing the Cederberg LM. The following have a bearing on the WRCS.

- The extension of Clanwilliam Dam wall;
- The creation a climate conducive for economic growth and development;

- Addressing of bulk service backlogs in order to unlock the development of medium and low income housing;
- Addressing the major socio economic challenges (education, safety and security, HIV/Aids and Health);
- Promoting the interest and well-being of the youth, children, women and disabled persons

SECTION 7: OVERVIEW OF BERG RIVER LOCAL MUNICIPAL AREA

7.1 INTRODUCTION

The Bergrivier LM is bordered in the west by the Atlantic Ocean, in the east by the Groot Winterhoek mountain's with the Berg River defining the southern boundary of the municipality. The Verlorenvlei and the northern section of the Groot Winterhoek mountains define the northern boundary. This is the section of the LM that falls within the Olifants/Doorn WMA. The relevant wards are Ward 5 and 6. The municipal area is approximately 4 407.04 km² in size with nine settlements of which three can be classified within the context of Bergrivier, as major towns namely Piketberg, Porterville and Velddrif. Piketberg serves as the administrative centre of the Bergrivier Municipality. The smaller settlements include Dwarskersbos, Redelinghuys, Aurora and Eendekuil. The two remaining settlements namely Wittewater and Goedverwacht are Moravian settlements and administered by the Moravian Church as is Genadenberg.

7.2 ECONOMIC OVERVIEW

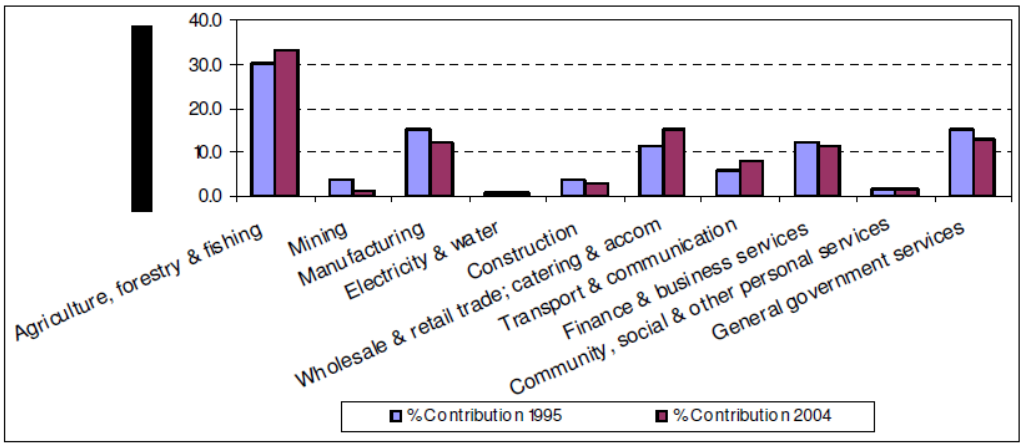
In 2007 the West Coast district had a Gross Domestic Product (GDP) of R6.8 billion of which the Bergrivier municipal area contributed R746 933 million representing 11% of the total. This represented the smallest contribution to the WCDM GDP (Socio-economic Profile: West Coast District, 2006). The municipal area is generally described as a low-growth area within the Western Cape, which over the past two decades has experienced real annual growth in excess of the national average. This subdued growth has been attributed to four key factors:

- Agriculture, the dominant sector, has been dampened by droughts, lower profitability and rationalization of production techniques
- Fishing has also been dampened due to lower catches and tighter controls
- Being located to the north-west of Cape Town, the area does not fall within the immigration corridor from the Eastern Cape, and
- The N 7 transport corridor from Cape Town to Namaqualand and further north (to Namibia and Angola) is only tangential to the municipal area (with Piketberg too close to Cape Town to function as a significant stop for these trucks).

The most important economic sector in 2004 was the Agriculture, Forestry & Fishing sector which accounted for 33.4% of the GDPR. This was followed by Manufacturing (12.4%), Wholesale & Retail Trade; Catering & Accommodation (15.2%) and Finance & Business Services (11.2%). General government Services also contributed a considerable proportion (13.2%) (Figure 7.1). Together, these sectors contributed 85.4% of the Berg River LMs economic output in 2004. Between 1995 and 2004, there was a shift in the economic composition of the region. The Wholesale & Retail Trade; Catering & Accommodation (3.78%) and Agriculture, Forestry & Fishing (3.07%) sectors recorded the largest proportional increases. Declining sectors over

this period were Manufacturing (by 2.81%) and Mining (by 2.42%) (Socio-economic Profile: West Coast District, 2006).

Total municipal revenue for Bergriver Municipality for the 2006/2007 financial year was R108.7 million. Own revenue constitutes the largest part of the total (R60.1 million or 55.36%). The Municipality's own revenue is mainly from three sources, namely electricity (46.3%), property rates (30,2%) and water (13,1%) for the 2006/2007 financial year (Socio-economic Profile: West Coast District, 2006).



Source: Socio-economic Profile: West Coast District, 2006.

Figure 7.1: Contribution to the Local economy

7.2.1 Agriculture, forestry and fishing sector

The Agriculture, Forestry & Fishing sector was the largest economic sector in 2004, with diverse activities including livestock farming (including milk), wheat, potato, fruit, and wine farming, horse breeding, rooibos tea, buchu, flowers (proteas) for export and commercial waterblommetjie sales. The sector grew at 1.4% between 1995 and 2004. Despite the water shortages experienced in the Western Cape, and the general stress in the sector, the sector's importance in Berg River's economy has increased. The sector remains a key economic sector in the region (Socio-economic Profile: West Coast District, 2006).

7.2.2 Wholesale & retail trade; catering and accommodation sector

The Wholesale & Retail Trade; Catering & Accommodation sector was the second largest sector in the Municipality. This sector includes tourist activities. Tourism is strongly linked to the natural environment, and the growth of tourism sector activities would depend on the preservation of the natural environment. Over the last decade this sector has been the fastest growing sector within the Municipality, growing at an average annual rate of 3.6% between 1995 and 2004 (Socio-economic Profile: West Coast District, 2006).

7.2.3 Manufacturing sector

The manufacturing sector contributed 12.4% (or R83 million) to total GDPR. In terms of activities, manufacturing is concentrated in two sub-sectors, namely Foods

Beverages & Tobacco (38,1%) and Other Non-metal Mineral Products (28,4%). A large part of the Manufacturing sector (Foods) is directly linked to the size of the agricultural sector. Over the last decade (between 1995 and 2004), the manufacturing sector has declined at an average annual rate of 1.9%. However, in 2004 the sector registered a growth of 4.1% (Socio-economic Profile: West Coast District, 2006).

7.3 DEMOGRAPHIC OVERVIEW

7.3.1 Population

In 2007, the population of Bergrivier municipality was estimated at 55 999. This accounts for ~17% of the West Coast District's population. Between 2001 and 2006, the population increased at an average annual rate of 2.57% from 48,076 to 54,658. It is however believed that there will be a declining growth rate between 2007 and 2015. Of the total population ~ 61% of the households are urban and the remaining 39% are rural. The majority of the population are Coloured (74%), followed by Whites (19%) and Black Africans (7%).

The population can be classified as youthful, with a median age of 28, just one year above the median age of the District. This profile is reflected in the large child population (between the ages of 0 and 15 years) as well as a large population of those in the 25 to 35 year age group (Socio-economic Profile: West Coast District, 2006). The dependency ratio was 0.52 in 2001 and is expected to drop to 0.51 in 2006. The projected dependence ratio remains at 0.51 in 2010.

Table 7.1: Estimated (urban) population figures for the Bergrivier municipal area

Town	*2001*	*2005*	*2007*	*2020*
Coastal Towns				
Velddrif	7 500	9 034	10 700	18 800
Dwarskersbos (seasonal)	500 (500)	-	800 (8 000)	1 600 (16 000)
Central Places				
Piketberg	9 600	9 300	11 900	15 800
Porterville	6 400	6 500	7 900	10 600
Isolated Villages				
Aurora	400	1 250	420	470
Redelinghuys	800		840	900
Eendekuil	600		1 000	1 050

7.3.2 Employment

The unemployment rate 2001 was 7.6%. The Bergriver Municipality's working-age population (people between the ages of 15 and 64) was estimated at 36 120, or 66.2% of its total population in 2006. This is expected to grow at a rate of 2.6% a year over the next four years, reaching 39 984 in 2010.

Based on the 2001 Census data, labour force participation declined slightly from 70 per cent to 68.2% between 1996 and 2001. The number of people employed increased to 19 793, while the number of unemployed increased to 1 629 in 2001. The majority of the employed population (75.7%) had not yet completed secondary education. This is reflective of low level of education in the region and the low skills levels. In terms of skill category, 9.1% of the employed are highly skilled, 36.6% skilled and 59.3% are low-skilled. The proportion of low-skilled occupations was the second highest in the District, after Cederberg's 64.5% (Socio-economic Profile: West Coast District, 2006).

In terms of employment, the Agriculture, Forestry & Fishing sector was the major employer, accounting for 53.3% of all jobs in the Municipality. The Community, Social and Personal Services (14.8%), Wholesale & Retail Trade (8.8%) and Manufacturing (7.2%) sectors also made significant contributions to employment (Figure 7.2). The seasonal nature of employment in the agriculture and fishing sector has both social and economic implications for workers owing to fluctuating income. In addition, the weakening global economic situation and changing environmental conditions (long term structural changes) are likely to impact negatively on the agriculture and fishing industries. This bleak economic situation is compounded by the low skills levels resulting in lay-offs in especially the construction and fishing industries (Socio-economic Profile: West Coast District, 2006).

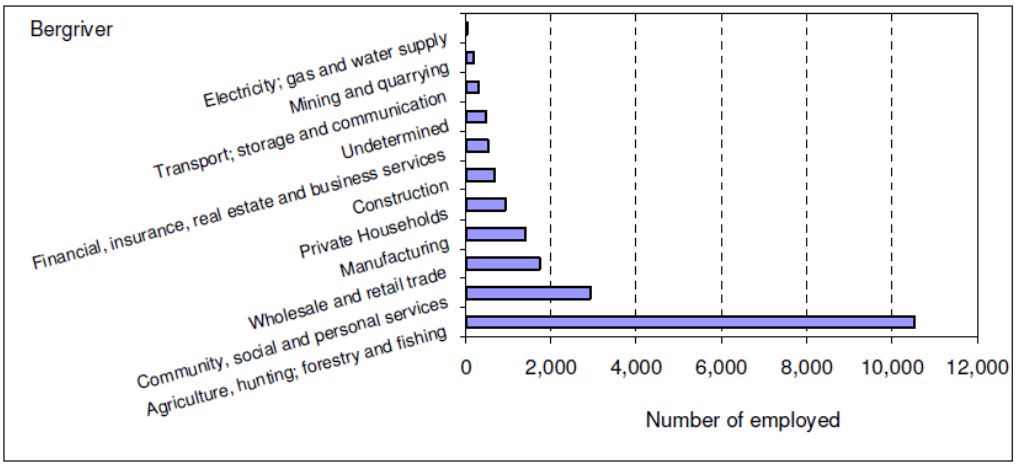


Figure 7.2: Bergriver Employment Numbers by Sector, 2001

7.3.3 Income

The majority of households (82.2%) in Bergriver have incomes of between R4 801 and R76 800 per annum (R400 to R6 400 per month). The 3.7% of households that have no income is lower than the 6.6% District figure, while 2.7% of all households earn between R1 and R4 800 per annum (less than R400 per month). Approximately 33% of households are headed by females, while 7.3% are headed by persons aged between 15 and 24 (Socio-economic Profile: West Coast District, 2006). This indicates that ~ 40% of all households in the berg River LM are headed up by potentially vulnerable members of the community, namely women and the elderly.

7.3.4 Education

Approximately 30% of the population over 14 years has had less than 7 years of formal education, just slightly above the District average of 29%. According to Census 2001, about 9.7% per cent of the population in Berg River had no schooling. This is marginally higher than the District average of 9.2%, and almost double the Provincial average of 5.7%. Approximately 23.3% of the individuals in Bergriver did not complete primary school education, as compared to 21.7% for the District. The percentage of people with a matric was 18.1% compared to 18.5% for the WCDM. The education levels in the Berg River LM can therefore be regarded as low (Socio-economic Profile: West Coast District, 2006).

7.4 MEASURE OF WELL BEING

The West Coast Socio-Economic Profile (2006) refers to three indicators of well-being, namely the Human Development Index (HDI), the City Development Index (CDI) and the Provincial Index of Multiple Deprivation (PIMD). The Human Development Index (HDI) is a composite measure that provides information on the human development performance of a region. It is an average of health, education, income and infrastructure indicators. The City Development Index (CDI) is a poverty measurement tool similar to the HDI, but designed to reflect a municipality's investment path.

When compared to the results for the Western Cape, both the HDI and CDI do not compare favourably with the Province and the District. The HDI for education was 0.55 compared to the Province's 0.68 (Table 5.2). The CDI components of waste (0.67), education (0.79) and infrastructure (0.74) were particularly low compared to the provincial figures of 0.89, 0.86 and 0.79, respectively (Socio-economic Profile: West Coast District, 2006).

According to the Provincial Index of Multiple Deprivation (PIMD) the majority of wards in the Berg River LM, with the exception of the employment index, were found within the most deprived 50 per cent of wards in the province (Socio-economic Profile: West Coast District, 2006).

	Bergriver Municipality	Western Cape Province
HDI (and components below)	0.66	0.72
Health	0.68	0.63
Income	0.74	0.84
Education	0.55	0.68
CDI (and components below)	0.70	0.81
Infrastructure	0.74	0.79
Waste	0.67	0.89
Health	0.69	0.68
Education	0.79	0.86
Income	0.76	0.82

Table 7.2: Human and City Development Indices and component scores

The housing backlog for Bergriver increased to 1 700 in 2004 from 711 in 2001. This issue has been identified by the Bergriver Municipality as a priority (Socio-economic Profile: West Coast District, 2006). In 2007 approximately 88% of households had access to piped water inside their homes. This represents a 15% increase from 2001. In terms of sanitation, the percentage of residents using the pit latrine system decreased from 4.5% in 2001 to 0.6% in 2007. Only 1.9% of residents have no toilet facility, indicating an improvement from the 2001 figure of 5.2%. In 2007 only 0.3% of residents used the bucket toilet system as opposed to the 2.6% in 2001. The long-term trend shows that access to sanitation facilities in the municipal area has improved significantly since 2001 (Socio-economic Profile: West Coast District, 2006).

SECTION 8: OVERVIEW OF WITZENBERG LOCAL MUNICIPAL AREA

8.1 INTRODUCTION

In administrative terms, Witzenberg Local Municipality (WLM) (Figure 2.1), is one of six LMs that make up the Cape Winelands District Municipality (CWDM). The administrative headquarters of the CWDM and the WLM are located in Stellenbosch and Ceres respectively. The remaining five LMs that make up the CWDM are the Drakenstein LM, Stellenbosch LM, Breede Valley LM, Langeberg LM and Cape Winelands District Management Area. The Cape Winelands District Municipality (CWDM) covers 22 000 km^2 and is the second largest centre of economic activity in the Western Cape Province.

The WLM is located ~ 150 kilometres north-east of Cape Town and is bordered by Drakenstein (Paarl) and Breëde Valley (Worcester). The WLM was established in 2000 and is classified as a Category B Municipality and is responsible for basic service provision to the demarcated municipal area that includes the towns of Ceres, Tulbagh, Prins Alfred's Hamlet and Wolseley. The LM comprises an area of 2 851km^2 and borders the Bergrivier Municipality in the west, the Breede River Municipality in the east, the Breede Valley Municipality to the south, the Cederberg Municipality to the north and northwest, Drakenstein Municipality to the southwest and the West Coast Municipality to the west. Located in the picturesque and fertile Breede Valley, Witzenberg is best known for its fruit and wine products. Horse and cattle stud farms are also found within the municipality. The region is surrounded by three mountain ranges – the Obiqua Mountains to the west, the Winterhoek Mountains to the north and the Witzenberg to the east – which are often covered in snow during the winter months.

8.2 ECONOMIC OVERVIEW

The DM is well-known for its natural beauty, it also has a strong agro-processing industry, which comprises more than a quarter of all agro-processing in the Western Cape. Economic activity is fairly diverse, with tourism, agriculture, manufacturing and a growing financial services sector all featuring in the region.

The three largest contributors to regional GDP are manufacturing (21%), finance & business services (20,7%) followed by the agriculture, forestry & fishing sector (16%). The latter sector's importance to the Western Cape's economic activity is also reflected in the fact that nearly one third (31%) of all agricultural products in the Western Cape is produced within the Cape Winelands. The agricultural sector is also one of the most important employment sectors within the Cape Winelands. In terms of the relative importance of each Municipality to the regional GDP of the Cape Winelands District, the Drakenstein Lm is the largest contributor to regional GDP (36,3 %), followed by Stellenbosch (22,8 %), the Breede Valley (18,9 %) and Witzenberg (9%) (Table 8.1).

Table 8.1: Cape Winelands DM municipal contributions to GDPR, 2004/05

	GDPR 2005, Rm	Percentage contribution per municipality, 2005	Growth 2004 - 2005
Municipality			
Witzenberg Local Municipality	1192.4	9.0	3.54
Drakenstein Local Municipality	4808.1	36.3	5.30
Stellenbosch Local Municipality	3022.9	22.8	4.17
Breede Valley Local Municipality	2505.5	18.9	4.17
Breede River/Winelands Local Municipality	1639.9	12.4	5.33
Cape Winelands District Municipality	13246.5	100.0	4.81

Source: Western Cape Provincial Treasury calculations based on Quantec Research data, 2007

In terms of land uses within the WLM is predominantly rural and dependent on agriculture not to just feed its people but as the backbone of economic activity. Environmental conservation is critical to ensure the sustainability of economic activity going forward. There is already extensive evidence of environmental damage as a result of agricultural and related activities.

In terms of economic activity, the WLM contributed 9 % to the CWDM regional gross domestic product (GDPR) in 2005, making it the smallest economy in the CWDM. The most important areas of economic activity in Witzenberg are Ceres and Wolseley. In 2005, Witzenberg LM was also the slowest growing economy in the Cape Winelands District. The three largest contributors to regional GDP were the agricultural sector (35,6%), manufacturing sector (21%), followed by the wholesale & retail trade; catering & accommodation sector (13,9%). In 2005, these three sectors jointly accounted for 70,4 % of Witzenberg's total economic activity. The agriculture sector's importance to the Western Cape's economic activity is also reflected in the fact that over 6 % of all agricultural production occurs in this area. In total, however, Witzenberg only contributes 0,8 % to the Province's total GDP. Interestingly, one of the traditionally strong sectors in Witzenberg, the manufacturing sector, has grown at over 10,6 % in 2004/05. This could potentially have a positive impact on employment, since the manufacturing sector is often one of the most important employment generators in an economy. The agricultural sector's (2,1%) growth has been relatively slow, but other, non-traditional sectors have grown at rates in excess of 5 %. The fastest growing sectors, has been the transport & communication sector at 6,2 % and the construction industry, which grew at 5,8 % in 2004/05. The most important manufacturing sub-sector is the food, beverages and tobacco sub-sector (69,4%). This is as expected given the importance of agriculture in the region. In terms of education levels, the WLM like those of the CWDM are low. The low income and education levels, coupled with low skills base hinder the development of the local economy.

6.1 DEMOGRAPHIC OVERVIEW

With a population in excess of 600 000, the CWDM accounts for ~ 14 % of the population in the Western Cape province, second only to the City of Cape Town. It is expected that the District will maintain its status as the second largest region for the foreseeable future, even though its population growth has slowed to 0,37 % cent in the period 2006 to 2007. The Actuarial Society of Southern Africa (ASSA) model estimates a further slowing of the population growth rate to 0,2 % annum between 2007 and 2012. The current population size is estimated to be 652 154, and is likely to grow to over 658 000 by 2012. The economically active population accounted for about two thirds, or 67 %, of the Cape Winelands' total population in 2007. This proportion is expected to increase marginally to 67,6 % by 2012. In terms of composition, Coloureds made up ~ 65% of the population, followed by Black Africans (~20%) and Whites (~15%).

With a total population of 88 390 the WLM has the smallest population in the CWDM and made up ~ 14 % of the Western Cape Province's population in 2007. However, less than 1 000 people live in the area that falls within the ODWMA, which represents ~ 1 % of the ODWMA population. The main towns in the WLM are Ceres, Tulbagh and Wolsley (all of which fall outside of the ODWMA)

It is expected that the region will maintain its current population status as the smallest region for the foreseeable future, given its relatively slow population growth rate of 0,75 % between 2006 and 2007. The population is expected to grow to 90 473 by 2012. Based on the 2001 Census data, Ceres with a population of 9 588, was the largest town in the WLM, followed by Wolseley (8 188) and Tulbagh (6 507).

In terms of composition, ~ 48 % of the population is under the age of 25. This trend is forecast to continue, with an estimated 47 % cent of the population to be under the age of 25 in the year 2012. The economically active population accounted for about two thirds or 65,7 % of the WLM's total population in 2007. This proportion is expected to increase marginally to 66 % by 2012. The aged (over the age of 65) made up 4,0 % of the WLM's population. The proportion of the aged is expected to grow to 4,5 % by 2012.

In terms of education levels, ~ 15% of the population over the age of 15 in 2006 had no schooling, while ~ 22% had some primary schooling (Table 8.2). Based on this ~ 37 % of the population over the age of 15 can be regarded as functionally illiterate given that Grade 7 is regarded as minimum requirement for literacy. In addition to the high illiteracy levels, only 14.3% completed matric, while only 2.9% went on to gain a post matric qualification. The education levels in the CWDM can therefore be described a low.

Table 8.2: Cape Winelands DM educational attainment levels, 2005-2006

	2005		2006	
		Percentage		Percentage
No Schooling	83 930	15.0	89 943	14.6
Some Primary	136 357	24.3	132 630	21.6
Completed primary	43 781	7.8	45 335	7.4
Some Secondary	156 341	27.9	216 083	35.1
Matric	77 374	13.8	87 970	14.3
Post Matric Qualification	35 437	6.3	17 607	2.9
Degree or postgraduate diploma	7 087	1.3	4 654	0.8
Hons, Masters, PHD	15 900	2.8	14 202	2.3
Other	4 751	0.8	6 782	1.1
Total	560 958	100.0	615 206	100.0

Source: Provincial Treasury calculations, GHS 2005 and 2006[7]

SECTION 9: OVERVIEW OF HANTAM AND KAMIESBERG LOCAL MUNICIPAL AREA

9.1 INTRODUCTION

The Hantam and Kamiesberg Local Municipalities are is located within the Namakwa District Municipality, which in turn is located in the western part of the Northern Cape and covers a geographical area of approximately 126 747.43 km²[7]. The Namakwa DM consists of 6 local municipalities and is bordered by the Siyanda and Pixley ka Seme Districts of the Northern Cape Province to the North-East and East, respectively, and by the Western Cape Province to the South (the West Coast, Boland and Central Karoo District Municipalities). The Atlantic Ocean is forms the Western boundary, while the Orange River forms the Northern border with Namibia (Centre for Development Support: Arid Areas Report, Volume 1, 2007).

The Local Municipalities within the District include:

- **Hantam:** the Hantam Local Municipality has the second largest population of the District, with around 21 233 people. It includes the towns of Calvinia, Niewoudtsville and Loeriesfontein and covers 27 967.97 km^2.
- **Richtersveld:** in the north, bordering with Namibia along the Orange River, with a total population of 14 612 and an area of 9 607.93 km^2, this municipality is home to Diamond Mines, with Port Nolloth being the largest settlement.
- **Nama Khoi:** includes the towns of Springbok, Okiep, Concordia, Nababeep, Bergsig, Fonteintjie, Carolusberg, Vioolsdrift, Rooiwal, Goodhouse, Matjieskloof, Buffelsrivier, Kleinzee, Bulletrap, Rooiwinkel, Henkries and Komaggas and is the "hub" of the Namakwa District both in terms of economic activity as well as population – with over 54 643 residents. The area covers 15 025.08 km^2;
- **Khai-Ma:** covering around 8 331.94 km^2 and home to approximately 12 571 people, the main towns include Pofadder and Aggeneys.
- **Kamiesberg:** South of Nama Khoi, along the west coast, this area includes Hondeklip Bay, Garies and Kamieskroon as its major settlements. The total population is estimated at over 12 116, the majority of whom are not economically active. The area is sparsely populated, at about 1 person per square kilometre over the 11 742.47 km^2.
- **Karoo Hoogland:** with a population of just over 10 419, this area is significant for science and technology, with Sutherland being the location of the SALT project. Other towns in this municipal area include Williston and Fraserburg. The

[7] At the time of preparing the report the Namakwa DM and Hantam IDPs could not be accessed from the municipal websites. It was therefore not possible to get more detailed data for both areas. This section will be updated in the final report.

majority of the population reside within these four towns. Vast rural and undeveloped areas exist. The total area covers 29 396.73 km^2.

The population density for the Namakwa DM is less than one person per square kilometre. The main sub-districts which it encompasses are those of Namaqualand, and the Hantam to its south-east. The area is rich in mineral deposits and is considered to have substantial tourism potential. The marginal nature of the ecology has attracted considerable interest from environmentalists, and in particular, the Succulent Karoo Environmental Programme (SKEP) (Centre for Development Support: Arid Areas Report, Volume 1, 2007).

9.2 ECONOMIC OVERVIEW

In terms of employment, the most important sectors in the Namakwa DM are the Wholesale and retail trade, repairs hotels and restaurants sector (37%) followed by the Agriculture, Forestry and Fishing sector (17%) and Mining and quarrying (14%). With the exception of mining same pattern exists in the Hantam LM. In terms of income the majority of households in the NDM fall within the R2 401-R 6 000 and R6 001-R12 000 annual income categories. Incomes are therefore low. The HLM is characterised by unemployment, low growth, low incomes and education levels and limited employment opportunities.

The key economic sectors in the Kamiesberg LM both in terms of GDPR and employment are Mining and Agriculture, Forestry & Fishing. As in the case of the NDM and Hantam LM, the local municipality is characterised by unemployment, low growth and low incomes, inadequate access to basic services and high illiteracy. In addition, role of mining in the area has decreased over the last 10-15 years.

Table 9.1: Employment by sectors in Namakwa District

Economic sector	TOTAL
Agriculture; hunting, forestry and fishing	6876
Mining and quarrying	5605
Manufacturing	912
Electricity; gas and water supply	141
Construction	1254
Wholesale and retail trade; repairs, hotels and restaurants	14788
Transport, storage and communication	589
Financial intermediation; insurance; real estate and business services	1178
Community; social and personal services	4427
Private households	2790
Other and not adequately defined	3
Undetermined	1882

Source: Centre for Development Support: Arid Areas Report, Volume 1, 2007.

9.3 DEMOGRAPHIC OVERVIEW

9.3.1 Population

The total population of the DM was 108 087 in 2001. Table 9.2 provides a breakdown of the population for each local municipality within the DM. In 2001 the Hantam LM has a total population of 19 804, which is 18.32% of the total population of the Namakwa DM. More recent figures indicate that the population of the Hantam LM has increased to 21 233 (Centre for Development Support: Arid Areas Report, Volume 1, 2007). The majority of the residents are Coloured (84%), followed by Whites (12%) and Black Africans (4%). Afrikaans is the predominant language in the region with 96% of the population speaking it as a first language.

Table 9.2: Breakdown of population in the Local Municipalities in Namakwa District, 2001

Local Municipality	Population	%
Nama Khoi	44 752	41.39%
Hantam	19 804	18.32%
Khâi-Ma	11 348	10.50%
Kamiesberg	10 743	9.94%
Karoo Hoogland	10 508	9.72%
Richtersveld	10 119	9.36%
Namaqualand	813	0.75%

The population is fairly highly urbanised in all local municipalities (61-83%), except in Kamiesberg (31%) and Nama Khoi (28%). In these municipalities, the development of communal farming is important (Centre for Development Support: Arid Areas Report, Volume 1, 2007) (Table 9.3).

Table 9.3: Urban and rural population, 2001

Local Municipality	Urban population	% urban
Khai-Ma	6 168	69.1
Karoo-Hoogland	8 480	61.1
Hantam	15 316	71.6
Kamiesberg	3 137	31.7
Nama Khoi	15 438	28.8
Richtersveld	9 685	83.7

Source: Centre for Development Support: Arid Areas Report, Volume 1, 2007.

The estimated population of the HLM is 21 233, of which ~ 18 000 live in ODWMA, ~ 15% of the total population of the ODWMA. Of this total ~ 16 000 live in Calvinia. The main towns are Calvinia, Niewoudtsville and Loeriesfontein. Approximately 70% of the population are urban based.

The population of the Kamiesberg LM is ~ 12 116, however, less than 1 000 of the total population of the Kamiesberg LM live in the ODWMA, which represents less than 1% Of the total population. The main towns are Hondeklip Bay, Garies and Kamieskroon. None of these towns are located within the ODWMA. Majority of the population are rural (~70%)

SECTION 10: OVERVIEW OF POLICY DOCUMENTS

10.1 INTRODUCTION

One of the key objectives of IDP documents prepared by local municipalities is to ensure alignment between national and provincial priorities, policies and strategies. The key national and provincial policies and strategies include:

- National Spatial Development Perspective;
- National 2014 Vision;
- National Key Performance Areas & Local Government Turn Around Strategy;
- Western Cape Growth and Development Strategy;
- Western Cape Provincial Spatial Development Framework; and
- Western Cape Climate Change Strategy and Action Plan.

10.2 NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE

The NSDP (2003) puts forward the following national spatial vision:

"South Africa will become a nation in which investment in infrastructure and development programmes support government's growth and development objectives:

- By focusing economic growth and employment creation in areas where this is most effective and sustainable;
- Supporting restructuring where feasible is to ensure greater competitiveness;
- Fostering development on the basis of local potential; and
- Ensuring that development institutions are able to provide basic needs throughout the country."

The NSDP enables government to answer two critical questions:

- If government were to prioritise investment and development spending in line with its objectives, where would it invest/spend to achieve sustainable outcomes?
- What kinds of spatial forms and arrangements are more conducive to the achievement of our objectives of democratic nation building and social and economic inclusion?

The NSDP puts forward five normative principles:

- Rapid economic growth that is sustained and inclusive is a prerequisite for the achievement of other policy objectives, among which poverty alleviation is key;
- Government has a constitutional obligation to provide basic services to all citizens wherever they reside;
- Beyond the above-mentioned constitutional obligation, government spending on fixed investment should be focused on localities with economic growth and/or

economic potential in order to gear up private-sector investment, stimulate sustainable economic activities and create long-term employment opportunities;
- Efforts to address past and current social inequalities should focus on people, not places. In localities where there are both high levels of poverty and demonstrated economic potential, this could include fixed capital investment beyond basic services to exploit the potential of those localities. In localities with demonstrated low economic potential, government should, beyond the provision of basic services, concentrate primarily on human development by providing education and training, social transfers such as grants and poverty-relief programmes. People should also be enabled to gravitate - if they choose to - to localities that are more likely to provide sustainable employment and economic opportunities;
- In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or that link the main growth centres. Infrastructure investment should primarily support localities that will become major growth nodes.

10.3 VISION 2014

In 2004 Government adopted Vision 2014 as guiding policy. The combination of some of the most important targets and objectives making up Vision 2014 are as follows:

- Reduce unemployment by half through new jobs, skills development, assistance to small businesses, opportunities for self-employment and sustainable community livelihoods;
- Reduce poverty by half through economic development, comprehensive social security, land reform and improved household and community assets;
- Provide the skills required by the economy, build capacity and provide resources across society to encourage self-employment with an education system that is geared for productive work, good citizenship and a caring society;
- Ensure that all South Africans, including especially the poor and those at risk - children, youth, women, the aged and people with disabilities - are fully able to exercise their constitutional rights and enjoy the full dignity of freedom;
- Compassionate government service to the people; national, provincial and local public representatives who are accessible; and citizens who know their rights and insist on fair treatment and efficient service.
- Significantly reduce cases of TB, diabetes, malnutrition and maternal deaths, and turn the tide against HIV/Aids, and, working with the rest of Southern Africa, strive to eliminate malaria, and improve services to achieve a better national health profile and reduction of preventable causes of death, including violent crime and road accidents.
- Position South Africa strategically as an effective force in global relations, with vibrant and balanced trade and other relations with countries of the South and the North, and in an Africa that is growing, prospering and benefiting all Africans, especially the poor.

10.4 MEDIUM TERM STRATEGIC FRAMEWORK FOR 2009-2014 (MTSF)

The MTSF base document is meant to guide planning and resource allocation across all the spheres of government. National and provincial departments in particular will need immediately to develop their five-year strategic plans and budget requirements taking into account the medium-term imperatives. Similarly, informed by the MTSF and their 2006 mandates, municipalities are expected to adapt their Integrated Development Plans in line with the national medium-term priorities. Each of the priorities contained in the MTSF should be attended to. Critically, account has to be taken of the strategic focus of the framework as a whole: this relates in particular the understanding that economic growth and development, including the creation of decent work on a large scale and investment in quality education and skills development, are at the centre of the government's approach.

The Medium Term Strategic Framework lists 10 priorities. Of these the following are relevant when considering the development of a WRCS:

- Speed up economic growth and transform the economy to create decent work and sustainable livelihoods;
- Massive programme to build economic and social infrastructure;
- Comprehensive rural development strategy linked to land and agrarian reform and food security;
- Strengthen the skills and human resource base;
- Improve the health profile of society;
- intensify the fight against crime and corruption;
- Build cohesive, caring and sustainable communities;
- Pursue regional development, African advancement and enhanced international co-operation
- Sustainable resource management and use;
- Build a developmental state including improvement of public services and strengthening democratic institutions.

10.5 WESTERN CAPE STRATEGIC PLAN (DRAFT, 2010)

In 2010 the Provincial Government of the Western Cape (PGWC) adopted its own set of 12 Strategic Objectives as part of its Strategic Plan for the Western Cape. The Strategic Objectives largely overlap with the 12 National Outcomes (Section 4.2.1), but are more directly focused on addressing the socio-economic and developmental needs of the Western Cape Province. The Draft Strategic Plan (WCDSP) document is discussed below[8].

The (Draft) Strategic Plan essentially replaces the 2008 Ikapa Growth and Development Strategy as the Province's overarching strategic plan for achieving economic growth, social equity, and broad-based empowerment of its citizens, while maintaining environmental integrity. The Objectives thus embody the key overarching strategic objectives identified by the incumbent Provincial Government

[8] PGWC: Department of the Premier (2010). *Delivering the Open Opportunity Society for All. Western Cape Draft Strategic Plan*.

for its term in office (i.e. until 2014). With regard to implementation, close co-operation between all three spheres of government is envisaged. However, particular emphasis is placed on provincial and local spheres, and defined concomitant responsibilities.

Strategic Outcomes linked to economic, social and environmental sustainability that are relevant to classification of water resources include:

- (1) Increasing opportunities for growth and jobs;
- (2) Improving education outcomes;
- (4) Increasing wellness, including mental health
- (5) Increasing community safety;
- (7) Mainstreaming sustainability and optimising resource use and efficiency.

The WCDSP couples each of the identified 12 Strategic Outcomes to associated problem statements, objectives, action plans and measurable targets. The discussion below focuses on existing baseline conditions, associated key issues, and proposed intervention strategies associated with those Strategic Objectives specifically of relevance to the classification of water resources.

Provincial socio-economic context

An overview of the current provincial socio-economic and developmental context is provided in an introductory chapter of the WCDSP. The problem statement sections for each of the relevant Outcomes provide additional key information with regard to existing issues specifically in need of priority intervention. As the WCDSP provides a good, fairly up-to-date overview of prevailing provincial socio-economic conditions and developmental challenges, some of the key findings are presented below.

Key demographic findings include the following:

- The province is home to 10% of the national population, but has a GDP share of 14%;
- 32% of the population (~1.67 million people), live in the rural areas of the province;
- The official unemployment rate for the Western Cape was estimated at 23.62% (second quarter 2010). Of the total unemployed, the majority of people were Coloured (272 852) and African (219 777);
- The Western Cape agricultural sector is highly developed and accounts for almost 21% of South Africa's agricultural production and 45% of the country's agricultural exports. An estimated 23% of the West Coast District Municipality (WCDM) population is employed in the agricultural sector.

Other key socio-economic findings with regard to priority issues facing PGWC in the provision of education, health, community safety and services, include the following:

- The provincial matric pass rate is progressively declining. In 2004 the province achieved an 85% pass rate, but this progressively dropped over the next five years, viz. to 78.6% in 2008. The document notes that this is alarming in view of the fact that a clear casual link between low education levels and poverty obtains. Furthermore, desired economic growth in the province is closely linked to the level of skills and training provided by its population;

- The Western Cape population suffers from a rapidly growing burden of disease. More and more people in the province are getting HIV/AIDS and tuberculosis (TB). In 2008, ~61 000 people tested HIV+ in the Western Cape, and the TB case load was increasing by ~24 500 per year. HIV+ testing prevalence within the age group 15-24 was 15% in 2004. The provincial TB cure rate was 79.4% in 2008;
- Between 2008 and 2010 there were slightly fewer murders and attempted murders in the province. However, the number of cases of people driving while under the influence of alcohol, sexual offences and drug related crimes continued to increase between 2008 and 2010. An increase of almost 9 000 drug-related cases were reported for the 2009/2010 financial year;
- The abuse of substances, especially drugs such as tik (methamphetamine hydorchloride), has reached epidemic proportions in the province. Compared to other provinces, the Western Cape has the second highest rate of harmful drinking during pregnancy, while the use of tik is highest in the Western Cape. The province does not have nearly sufficient treatment and rehabilitation infrastructure;
- Current demand for housing far outstrips supply. At current rates of delivery – combined with household growth fuelled in large part by in-migration from other provinces and urbanisation – the number of households with inadequate shelter is likely to nearly double, from between 400 000 and 500 000 (2010) to over 800 000 over the next 30 years.

Key environmental sustainability findings relating to resource use and well-being include the following:

- Climate change constitutes one of the biggest medium-long term challenges facing local communities. Its effect on the province's natural resources, namely land, water, air, soil and biodiversity, as well as ecosystem goods and services, is likely to have a major impact on vulnerable economic sectors such as agriculture and communities (especially the poor communities) within the province;
- In 2004, the main sectoral contributors to the province's carbon footprint were Industry (47.3%); Transport (22.3%); Residential (15.5%); and Agriculture (6.1%); Mining and Quarrying was responsible for a relatively small 2.2%;
- In 2004, the Cape West Coast District Municipality (WCDM) generated an estimated 3% of total provincial CO_2 emissions; 14% of the provinces' NO_2 emissions, and 12% of its SO_2 emissions;
- ~95% of the energy currently used in the province is generated by the burning of non-renewable, greenhouse-effect enhancing fossil fuels (coal and oil). The document notes that this is completely non-sustainable for a number of reasons, including long term resource security (linked, amongst others, to Eskom's capacity and infrastructure), as well as emissions associated with the generation of the electricity.

Action Plans and Targets for 2014

The WCDSP includes action plans and targets aimed at addressing priority intervention areas, linked to the Strategic Objectives.

Proposed socio-economic interventions are underpinned by the Administration's beliefs that "economic growth constitutes the foundation of all successful development; that growth is driven primarily by private sector business operating in a market environment; and that the role of the state is (a) to create and maintain an

enabling environment for business and (b) to provide demand-led, private sector-driven support for growth sectors, industries and businesses" (WCDSP; 2010: 8).

Key socio-economic targets which have a potential bearing on well-being include:

- A reduction in HIV prevalence amongst the age group 15-24 (from 15% in 2008) to 8% (by 2015);
- An increase in the TB cure rate (from 79.4% in 2008) to 80% (by 2012/3);
- An increase in the provision of serviced housing sites from the target of 18 000 (2010) to 31 000 in 2014/15.

10.6 WESTERN CAPE PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK

The Western Cape Provincial Spatial Development Framework ("PSDF") was endorsed by Cabinet in June 2009. The PSDF has been approved as a Structure Plan in terms of the Land Use Planning Ordinance (No. 15 of 1985). The PSDF is a long-term planning instrument, which is to be reviewed every five years. The next revision is due in 2014. In as far as could be established, none of the Directives contained in the 2009 PSDF have been amended at present (2011).

The PSDF currently constitutes the fundamental policy instrument with regard to the spatial dimension of all development planning in the Western Cape. The constitutionally defined administrative principles of co-operative governance and hierarchical conformity (in setting policy) mean that all lower order (i.e. district and municipal) spatial development policy documents (e.g. spatial development frameworks, spatial plans, land use determinations) need to conform the essential provisions of the PSDF[9]. One of the key purposes of the PSDF is therefore exactly to guide municipal (district, local and metropolitan) Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs), provincial and municipal Spatial Development Plans (SDPs), and other spatial planning documents (e.g. urban edge delineations and zoning schemes).

The PSDF is underpinned by the fundamental assumption that development can only be acceptable and in the public interest if it is environmentally sustainable – that is ecologically justifiable, socially equitable as well as economically viable - and then in a hierarchical relationship, where economic efficiency (prosperity) is underpinned by social equity (human capital), which in turn is underpinned by ecological integrity (ecological capital – or health of ecological systems). The PSDF emphasises that in the South African context, the aspect of social equity is of extreme relevance, as it emphasises the need to redress the wrongs of the past (social justice) as a central component of social sustainability.

A number of key spatial objectives and associated interventions are broadly applicable to decisions affecting the water classification process. These pertain to Objectives 5 and 9 of the PSDF, viz. the "Conservation of the Sense of Place of Important Natural, Cultural and Productive Landscapes" (Objective 5), and the "Minimization of the Consumption of Scarce Resources" (Objective 9). These are each briefly discussed below in relation to their applicability to the PPC proposal.

[9] In turn, the PSDF conforms to national spatial and developmental policy (i.e. the 2006 National Spatial Development Perspective) in all essential regards.

Objective 5: Conserve the sense of place of important landscapes

The PSDF notes the vital importance of tourism to the Provincial economy. The PSDF therefore stipulates that, with regard to the siting and design of future substantial infrastructural development the relevant provincial guidelines should be followed, and proposals should include provision for environmental, visual and heritage impact assessments.

In this regard, large areas of the Olifants/Doorn WMA have high scenic and heritage value and tourism is an important and growing sector of the economy.

Objective 9: Minimize Consumption of Scarce Environmental Resources

The PSDF highlights the province's vulnerability to climate change – i.e. to livelihoods associated with key economic sectors such as agriculture, fisheries and tourism, as well as the continued viability of existing settlement patterns. In this regard the PSDF notes that the West Coast District Municipality (WCDM) is the region in South Africa likely to be most extremely affected by global climate change (PSDF; 2009: 2.4.1.). Vulnerability to climate change is identified as one of six key issues facing the WCDM.

In line with national government's Climate Change Response Strategy, the PSDF makes provisions related to demand management, rationalisation in the use of non-renewable/ scarce resources, as well as the development of replacement renewable resources. Strategies and targets mainly relate to encouraging more efficient settlement patterns, reducing road use and rationalizing (public and private) transport, material recycling and reuse, incrementally shifting energy generation to solar and wind, rationalizing water use, and encouraging the minimized consumption of scarce (irreplaceable) strategic resources such as building materials.

10.7 CLIMATE CHANGE STRATEGY AND ACTION PLAN FOR THE WESTERN CAPE

The (Western Cape) Climate Change Strategy and Action Plan (Final Draft, December 2008) were commissioned by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP). The document is aligned with the overarching Western Cape Sustainable Development Strategy, and gives expression to the PGWC's acknowledgement that the Western Cape will inevitably be affected by climate change, and thus needs to timeously intervene by implementing a sound response strategy.

The document consists of two sections. The first section examines climate change and linked socio-economic factors in the Western Cape, and establishes the clear need for a climate change response in the region. The second section outlines the key aspects of the Western Cape's response strategy.

Key findings pertaining to current energy use and greenhouse emissions generation in the Western Cape and the province's extreme vulnerability to climate change include the following:

- South Africa is currently ranked as the 19th greatest emitter of greenhouse gasses (absolute terms) in the world. While the Western Cape's local direct

emissions are relatively low, this is largely the result of the province importing most of its electricity (~90%), mainly from Mpumalanga;
- There is little doubt that the Western Cape will experience the effects of human-induced climate change in the near future, possibly as early as 2030. Current predictions indicate that the Western Cape will generally become hotter and drier. Predictions indicate a mean increase in temperature of at least 1 °C by 2050. Higher mean temperatures will have negative consequences for rainfall (frequency, amount) as well as the soil's ability to retain moisture. Periods of drought are anticipated to become more frequent and intense. Drier, hotter conditions will also increase the risk of more frequent, more severe fires;
- Predicted hotter and drier conditions hold significant risks to the Province's key economic sectors and associated livelihoods. Compromised growing conditions and less water available for irrigation will negatively affect the agricultural sector – with massive negative implications for the regional economy, employment as well as regional food security. Increased sea surface temperatures will likely impact negatively on fish stocks. The tourism sector is likely to suffer from changes in the landscape amenity.

The response strategy and action plan

The document notes that, while in terms of the Kyoto Protocol, South Africa, as a developing nation, does not have to take active steps to mitigate its carbon emissions, valuable export markets in the European Union are already starting to impose carbon emission reduction targets on their suppliers. The Western Cape, whose important agricultural sector is to a large extent export-orientated (wine, fruit, etc) stands to lose market share on agricultural goods, for example, if no attempt is to be made to achieve at least carbon neutrality (no net emission of carbon for a produced good).

- The Province's response strategy and associated action plan is based on two thrusts, namely adaptation and mitigation;
- Four key outcomes are identified, including reduction of the province's carbon footprint (Outcome 4);
- Associated strategies include promotion of energy efficiency (including demand management), effective waste management strategies, and cleaner fuel programmes for households and transport.

SECTION 11: OVERVIEW OF POLICY DOCUMENTS

11.1 INTRODUCTION

Section 11 provides a summary of the key findings of the socio-economic study, including a summary of the findings of the agricultural economic study. The section also comments on the key findings of the review of Volume 3: Socio-economic Classification Guidelines for the 7-step classification system.

11.2 KEY SOCIO-ECONOMIC INFORMANTS

- Local economy is dominated by agricultural sector (~ 43 % GDPR), followed by Manufacturing (~ 25% GDPR). The manufacturing sector is largely linked to the processing of agricultural products;
- Agriculture and Manufacturing account for ~ 50% of employment;
- Agriculture accounts for 95% of the water use in the ODWMA;
- The available water resources in the ODWMA are already fully utilised and shortages occur in Olifants sub-region which has the highest concentration of the population (75%) and accounts for 65% of the water used;
- The majority of the population (~70) live in urban settlements, while the remaining 30% live in the rural areas;
- All of the main towns, with the exception of Calvinia are located on Olifants River;
- Population growth in the ODWMA is low, and negative in some areas;
- In-migration to the area is low;
- Agriculture will remain the dominant economic sector. Growth in the agriculture sector has, however, been slow and employment is seasonal;
- The needs of emerging farmers, both in terms of land and water, need to be addressed;
- Education, income and skills levels in the region are low. This is exacerbated by the dominance of the agricultural sector;
- Tourism represents a key growth sector;
- The mining sector may grow in the future and place additional pressure on water resources.
- The West Coast District Municipality (WCDM) has been identified as the region in South Africa that is likely to be the most affected by global climate change.

11.3 SUMMARY OF WATER USERS

Per sub area

- Olifants sub-area: 66% (Accounts for ~ 75 % of population)
- Koue Bokkeveld sub-area: 18% (Accounts for ~ 2 % of population)
- Sandveld sub-area: 10% (Accounts for ~ 8 % of population)
- Doring sub-area: 4% (Accounts for ~ 15 % of population)
- Knersvlakte sub-area: 2% (Accounts for ~ 1% of population)

Per economic sector

- Agriculture: ~ 95%
- Urban and industrial (including manufacturing): ~2%
- Rural use, including livestock: ~ 2%
- Mining: ~ 1%

11.4 SUMMARY OF AMENTITY AND ENVIRONMENTAL VALUES

- Olifants River estuary is one of only three permanently open estuaries on the west coast of South Africa. Ranked as the third most important estuary in South Africa in terms of conservation;
- Olifants Estuary an important resource for the local community at Papendorp
- Verlorevlei wetland in the Sandveld (RAMSAR status);
- Cederberg Wilderness Area and the northern section of the Groot Winterhoek Wilderness Area. These areas also represent the key catchment areas for the Olifants River;
- Olifants River and Doring River are important from a conservation perspective as they contain a number of indigenous and endangered endemic fish species;
- Clanwilliam dam and Bulshoek barrage (amenity and recreational values linked to water);
- White water rafting on Doring River;
- Tankwa-Karoo National Park.

11.5 SUMMARY OF AGRICULTURAL-ECONOMIC STUDY

The key conclusions of the agricultural-economic study indicate that all of the WMA's, on farm level, will experience a significant increase in profit generation if water availability can be increased according to the projected levels. In the case of the Lower Olifants River basin, such a change is desperately required by farms with a size similar to that of the typical farm model. A regional level the increased availability of water will result in significantly greater welfare creation. This will in turn generate more upstream (input side of the farm) and downstream (marketing of the farm produce) benefits.

The reduction in water availability as in the case of Area 2 of the Sandveld has a similar magnitude, but negative financial impact. The low IRR of 3.2% warns that such a reduction in water availability will mean the termination of most farms in the particular area if the reduction is applied to all farming activities.

In terms of employment, all the WMA areas show an increase in employment numbers in response to an increase in water availability, except for seasonal labour in the Lower Olifants River basin, due to the termination of labour intensive vegetable production. More water and greater assurance of delivery are essential for the longer term viability of the typical farm and the protection of the employment capacity of wine grape production.

11.6 REVIEW OF THE SOCIO-ECONOMIC CLASSIFICATION GUIDELINES

The proposed approach to and methods used for measuring well-being were found to be problematic in that they assume that the factors that inform and are used to measure well-being are closely linked to water and ecosystem health. However, as indicated above, there are a number of other factors that are likely to have a more important bearing of overall well-being. In addition, for many of the indicators/measures it is not possible to establish a clear link between well-being and water. Changes in the water resource class are therefore likely to have little or no bearing on these indicators. Their applicability and use when considering scenarios for assessing water resource class and comparing scenarios is therefore likely to be limited.

As a result Step 1E (Describe communities and their well-being) and Step 1J (Describe the present-day community well-being within each IUA) are likely to be challenging. This has direct implications for Step 1L (Develop and or adjust the socio-economic framework and the decision-analysis framework). Due the potential concerns regarding the type of information used to measure societal well-being and challenges associated with establishing TEV, is it recommended that consideration be given to simplifying these aspects of the socio-economic assessment process for the WRCS and the associated determination of water resource class.

11.7 CONCLUSION

The key findings of the socio-economic study indicate that the agricultural sector followed by manufacturing represent the key economic sectors in the ODWMA both in terms of contribution to GDPR and employment. Together they account or ~ 68% of the GDPR and 50% of the employment. The agricultural sector is also the single largest consumer of water (95%). Urban and industrial (including manufacturing) (2%), rural use, including livestock (2%) and mining (1%) make up the remaining 5%. In terms of population, the majority of the population (~70) lives in urban settlements, while the remaining 30% lives in the rural areas. The water supply of the majority of the population is therefore linked to and dependent upon the local authorities in the ODWMA. The Olifants sub-area, which has 75% of the total population of the ODWMA, accounts for 66% of the water usage. Koue Bokkeveld sub-area, which has 2 % of the population accounts for 18% of the water usage. The Sandveld sub-area which accounts for 8% of the population, accounts for 10%. The study also found that population growth in the ODWMA is low and negative in some areas. Future growth in demand for water is therefore likely to be linked to increased demand from agricultural sector and not due to increased demand linked to population growth.

The findings of the agricultural-economic study indicate that all of the WMA's, on farm level, will experience a significant increase in profit generation if water availability can be increased according to the projected levels. In the case of the Lower Olifants River basin, such a change is desperately required by farms with a size similar to that of the typical farm model. A regional level the increased availability of water will result in significantly greater welfare creation. This will in

turn generate more upstream (input side of the farm) and downstream (marketing of the farm produce) benefits.

In terms of employment, all the production areas in the WMA show an increase in employment numbers in response to an increase in water availability, except for seasonal labour in the Lower Olifants River production area, due to the termination of labour intensive vegetable production.

Based on the above information the proposed scenario of a 15% increase in water availability for agricultural use will result in socio-economic benefits for the affected farmers and the ODWMA as a whole. This is due to the dominant role played by the agricultural and the associated manufacturing sector in the areas local economy. However, it should be noted that such an improvement will not necessarily translate into an improvement of the over well-being of all communities in the ODWMA. Such an improvement is also dependent upon a range of other factors that are not necessarily directly linked to determination of a management class (water resource class). These include improved education and access to basic services, such as housing, sanitation and electricity etc. The provision of and improved access to these services is linked to the performance of the relevant national, provincial and local authorities. Likewise the 15% increase in water availability in selected areas in the catchment will not necessarily translate into benefits for emerging farmers. The success of emerging farmers in the ODWMA is linked to a range of other factors which fall outside the scope of a water resource classification exercise, including the cost of land and capital equipment, support from government, market fluctuations, interest rates and the fuel price etc.

ANNEXURE A

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