



Olifants-Doorn Water Management Area

Proposal for the Establishment of the *Olifants-Doorn Catchment Management Agency*

**Developed in terms of Section 77 of the National Water Act, 1998
(Act No. 36 of 1998)
for submission to the Minister of Water Affairs and Forestry**

Prepared by the stakeholders of the Olifants-Doorn WMA and facilitated by:
UBUFAZI CONSULTING

Report prepared with aid from
Danida

Acknowledgements

This proposal would not have been possible without the input from all the stakeholders (represented by the Catchment Management Agency Reference Group) in the Olifants-Doorn Water Management Area. Without their dedicated support and enthusiastic participation in the process, this proposal could easily have become just another report written by the Department of Water Affairs and Forestry and their appointed consultants, representing the views of the people in the area but without real and proper consultation with the people.

This Proposal is a Proposal written by the people for the people of the Olifants-Doorn Water Management Agency.

The continuous involvement of all stakeholders was made possible by means of the financial support provided by Danida (the Danish International Development Agency). Public participation is a long and expensive process, but it bears fruit in the support obtained from stakeholders and the capacity built in the area for all stakeholders to understand principles underpinned in the National Water Act and the Water Services Act.

Danida was involved in three pilot projects in South Africa with the aim to promote and build capacity regarding the importance of integrated water resources management. The Olifants-Doorn was selected as one of the water management areas in which a pilot study should be done. As the process to establish a Catchment Management Agency for this area had not yet started, Danida agreed to fund this process as part of their integrated water resource management project.

The result is a fully integrated, community and stakeholder driven *Proposal for the Establishment of the Olifants-Doorn Catchment Management Agency*.

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Executive Summary

The promulgation of the National Water Act (Act No. 36 of 1998) set in motion a process of fundamental change in the way in which water resources are managed in South Africa. One of the key aspects of this process is the establishment of new water management institutions that will allow water user and interest groups to participate in the management of their water resources. The most significant of these institutions is the Catchment Management Agency (CMA).

The National Water Act makes provision for the creation of CMAs to manage the water resources within specific Water Management Areas. In his capacity as custodian of the nation's water resources, the Minister of Water Affairs and Forestry, through the Department of Water Affairs and Forestry (DWAF), has divided South Africa into 19 Water Management Areas (WMAs). The goal is the holistic and sustainable management of South Africa's water resources through an institutional framework of integrated water resources management.

To provide assistance to institutions working in integrated water resources management (IWRM), the Danish International Development Agency (Danida), in conjunction with the Department of Water Affairs and Forestry (DWAF), had requested Carl Bro, an international multidisciplinary consultancy, to develop national guidelines for promoting integrated water resources management. The project was piloted in three water management areas during 2001 – 2003: Olifants-Doorn (Western/Northern Cape), Mvoti-Mzimkulu (KwaZulu Natal) and Crocodile-West/Marico (Gauteng/North-West Province).

As no CMA proposal had yet been written for the establishment of the Olifants-Doorn WMA, it was decided that the development of national guidelines for institutional roles and linkages in integrated water resources management could be used as part of the process to develop a *Proposal for the establishment of a CMA for the Olifants-Doorn WMA* (hereafter referred to as "the Proposal").

The Proposal is prepared in terms of Section 77 of the National Water Act, Act No. 36 of 1998, which requires that proposals include the following:

- (a) *A proposed name and a description of the proposed water management area of the agency;*
- (b) *A description of the significant water resources in the proposed water management area, and information about the existing protection, use, development, conservation, management and control of those resources;*
- (c) *The proposed functions of the CMA, including functions to be assigned and delegated to it;*
- (d) *How the proposed CMA will be funded;*
- (e) *The feasibility of the proposed CMA in respect of technical, financial and administrative matters; and*
- (f) *An indication whether there has been sufficient consultation during the development of the proposal, as well as the results of the consultation.*

The Proposal is structured according to a format suggested by the Department of Water Affairs and Forestry's Western Cape Regional Office, the national Directorate of Catchment Management and Danida. The contents of the Proposal are the result of deliberations by the Olifants-Doorn CMA Reference Group, assisted by a support team that were guided by DWAF: Western Cape.

In **Section 1** of the Proposal, a summary of the participation process is given. This Section shows how water user and interest groups became involved in the establishment of catchment forums and water resource management issues, as well as in the development of the Proposal, how the Olifants-Doorn CMA Reference Group was established and how it functioned. The capacity-building and empowerment activities undertaken in the WMA are discussed in detail, and comments are provided on the representation of groups and sectors. Section 1 also focuses on the communication activities implemented to create a better understanding of the issues related to IWRM and the reasons for the CMA establishment process. The Section concludes with the comments from stakeholders regarding the participation and information dissemination process.

Section 2 focuses on the description of the Olifants-Doorn WMA, as well as the description of the existing water requirements per quaternary drainage area. The latter description was done by the

eleven Catchment Forums that have been established. The presentations provided a vehicle for community involvement in developing the proposal and bringing the concept of IWRM to grassroots level. The Section also provides an overview of the key water resource issues – once again identified by the forums. Of interest is to note that these presentations highlighted a number of relevant water issues that were brought to the attention of the relevant authorities.

Section 3 gives a detailed description of the institutions involved in water matters in the Olifants-Doorn WMA. The capacity and expertise already present in the WMA because of these institutions, as well as the willingness of Non Governmental Organisations (NGOs), Community Based Organisations (CBOs) and Emerging Service Providers (ESPs) to become involved in water resource management, will simplify the tasks of the proposed CMA. This is the reason why it is proposed that the CMA operates with a small core personnel structure and rather outsource as many operational functions as possible to existing and emerging institutions in the area.

Sections 4 and 5 provide detail on the functions the proposed CMA should fulfil – taking into account the existing capacity in the area – and the proposed organisational structure which the CMA should take on over a period of time until it has established itself as a “responsible authority” in terms of the National Water Act (Act No. 36 of 1998). It is envisaged that the CMA will grow from an initial 6 staff members to approximately 16 staff members upon full functionality.

Section 6 discusses the cost and the financial viability of the CMA – taking into account the functions it has to perform and the services it has to deliver – in comparison to the income it will generate by means of water use charges.

Section 7 provides an overview of the social, technical, organisational and financial viability of the Olifants-Doorn CMA. It highlights the strengths that the CMA will be able to build on, but also the challenges it will face during its evolution process.

The process to be followed during the period from when this Proposal has been submitted to the Minister and the CMA becomes functional is described in **Section 8**.



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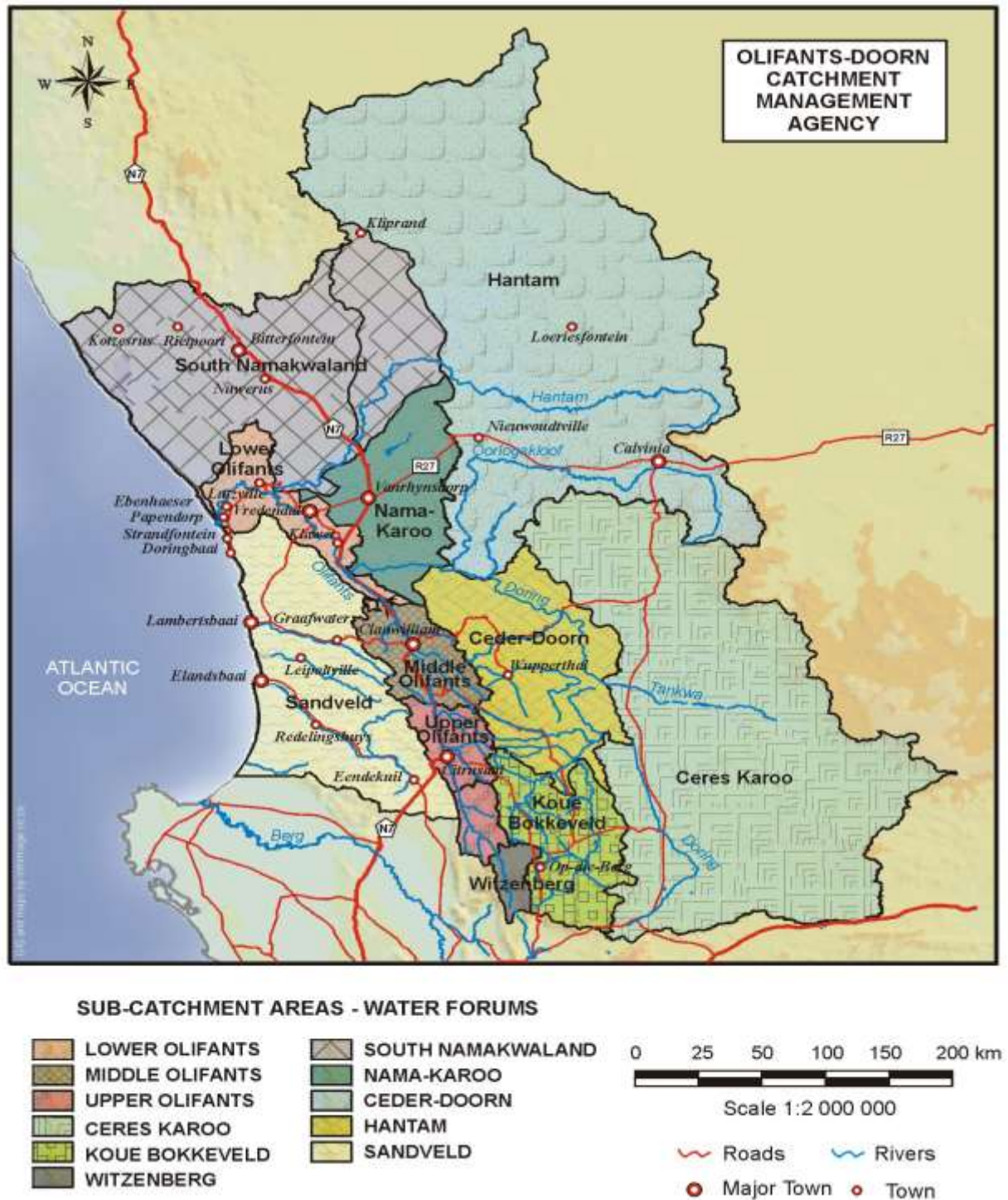
List of Acronyms

C.A.P.E.	Cape Action Plan for People and the Environment
CBO	Community-based Organisation
CEO	Chief Executive Officer
CMA	Catchment Management Agency
CMS	Catchment Management Strategy
CNC	Cape Nature Conservation
Danida	Danish International Development Agency
DWAF	Department of Water Affairs and Forestry
ESP	Emerging Service Provider
GIS	Geographic Information System
Ha	Hectare
HDI	Historically Disadvantaged Individual
HO	Head Office
IDP	Integrated Development Plan
ISP	Internal Strategic Perspective
IWRM	Integrated Water Resource Management
LORWUA	Lower Olifants River Water User Association
m³	Cubic Meter (equal to kilolitre or 1 000 litres)
NGO	Non-Governmental Organisation
NWA	National Water Act
NWRS	National Water Resource Strategy
PCM	Project Cycle Management
RQO	Resource Quality Objectives
SPP	Surplus People Project
TMG	Table Mountain Group
WARMS	Water Use Authorisation and Registration Management System
WCDM	West Coast District Municipality
WCNCB	Western Cape Nature Conservation Board
WDCS	Waste Discharge Charge System
WfW	Working for Water
WMA	Water Management Area
WMI	Water Management Institutions
WODRIS	Western Cape Olifants/Doring River Irrigation Study
WRM	Water Resource Management
WSA	Water Services Authority
WSI	Water Services Institution
WSP	Water Services Provider
WUA	Water User Association

1. Summary of the participation process

Participation by water user and interest groups is key to the development of this Proposal. The main vehicle for direct participation is the Olifants-Doorn Catchment Management Agency (CMA) Reference Group, supported by participative activities from the Catchment Forums established for the eleven sub-catchment (quaternary drainage) areas within the Olifants-Doorn Water Management Area (WMA). The map below illustrates the WMA divided into these eleven sub-catchment areas.

Figure 1.1: Sub-catchment Areas in the Olifants-Doorn WMA



In this Section, the following are discussed:

- ❑ Identification and mobilisation of stakeholders.
- ❑ Approach to engagement, capacity building and empowerment.
- ❑ Representation.
- ❑ Stakeholder comment on the CMA establishment process and the submission of this Proposal.

1.1 Identification and mobilisation of stakeholders

A comprehensive report on the identification and mobilisation of stakeholders is attached as Annexures 1.1.1 to 1.1.3 (reports dated February 2001, July 2002 and March 2003).

1.1.1 Catchment Forums

The formal process of establishing catchment forums started in February 2001. A number of public meetings (refer to the reports mentioned in Section 1.1) were held which involved a wide range of interested and affected parties. The aims of the public meetings were to:

- ❑ Inform the public about the CMA establishment process.
- ❑ Identify individuals, stakeholders, and interested and affected parties in the CMA establishment process.
- ❑ Identify individuals, stakeholders, and interested and affected parties who would be willing to serve on Catchment Forums (one committee for each quaternary drainage area).

These meetings culminated in the establishment of eleven Catchment Forums in the Olifants-Doorn WMA. They are:

- ❑ Upper (Bo) Olifants
- ❑ Ceder-Doorn
- ❑ Ceres-Karoo
- ❑ Hantam
- ❑ Koue Bokkeveld
- ❑ Lower (Laer) Olifants
- ❑ Middle (Middel) Olifants
- ❑ Nama-Karoo
- ❑ Sandveld
- ❑ Namaqualand South (Suid-Namakwaland)
- ❑ Witzenberg

After information meetings were held, the Catchment Forums were formally constituted during 2002, with each forum electing a chairperson and vice-chairperson. As the expertise in Water Resources Management was at that stage still mainly vested in members from the previously advantaged group, the chairpersons were generally chosen from this group. For the purpose of capacity building, the vice-chairpersons were generally chosen from the previously disadvantaged group. This has already born fruit, as there were resignations by three chairpersons and the vice-chairpersons were sufficiently capacitated so that they could take over as chairpersons.

Staff from DWAF, as well as the consultants appointed for the public participation process, was assigned to mentor and support those forums that struggled to convene meetings and/or identify issues.

An action plan has been drawn up for each forum area, which includes the frequency of meetings to be held by each forum. This ranges from once every three months to twice per year – depending on the issues and needs of the area. At the catchment forum meetings, participants are encouraged to identify issues related to water management in their sub-catchment and are motivated to seek solutions and make recommendations to DWAF or relevant institutions. Participants are always reminded that the objective is to bring Water Resource Management to community level for everyone to understand and participate in. Other important matters, such as licence applications,

feedback on projects and the latest developments with regard to the implementation of the National Water Act (Act No. 36 of 1998), are also discussed at these forum meetings.

A support team (under the auspices of DWAF: Western Cape and Danida) continued to meet with forum members to record issues and encourage participation in Integrated Water Resource Management (IWRM) activities. An important aim of the participation support team was to ensure that the majority of the forum members were in a position to review the Proposal during the drafting thereof and again after its publication in the *Government Gazette*.

DWAF: Western Cape also ensured that all forum members and stakeholders were informed about the National Water Resources Strategy (NWRS). A successful and well-attended public meeting, introducing the NWRS, was held in Clanwilliam on 13 November 2002.

DWAF will also ensure that forum members participate in the development of the first formal catchment management strategy for the Olifants-Doorn WMA. Such participation will further develop stakeholders' understanding of the progress of the water resource management dispensation and will allow them to find more tangible solutions for some of the IWRM issues in their WMA.

1.1.2 CMA Reference Group

On 13 November 2001, all members of the catchment forums, as well as all other interested parties, were invited to a meeting in Clanwilliam for the stakeholders in the entire Olifants-Doorn WMA. The aim of the meeting was to select a Reference Group on which all sectors are represented. This would ensure that the respective interests of all stakeholders are accommodated. During this meeting, representation in the Olifants-Doorn CMA Reference Group was discussed and 73 members were elected to represent the various sectors and organisations in the area in the CMA Reference Group, excluding the support team and DWAF staff directly involved in the area. Representation was not based on volume or extent of water use or on the size of the organisation. In addition, this membership **was never closed** and organisations were welcome to join the CMA Reference Group upon request.

The CMA Reference Group meetings were aimed primarily at the development of the ***Proposal for the establishment of a CMA for the Olifants-Doorn WMA*** in a systematic, yet progressive manner.

Because of the demographics of the Olifants-Doorn WMA, Afrikaans was predominantly used at all meetings (especially forum meetings). Since a few English-speaking persons often attended the CMA Reference Group meetings, these meetings were conducted in English and Afrikaans. All participants were encouraged to use the language of their choice and all English input was translated into Afrikaans. All documents were prepared in English, but were translated into Afrikaans to enable stakeholders to understand and actively participate in the discussions.

Invitations, draft agendas and preparatory documentation were sent in the language of their choice to all members of the Olifants-Doorn CMA Reference Group before each meeting. Follow-up contact was made by telephone to confirm attendance. Minutes of meetings were sent to all members (usually with the preparatory material for the next meeting).

The CMA Reference Group met on the following dates:

❑ **Meeting 1: 28 February 2002 in Clanwilliam**

This meeting provided an overview of the existing water resources per quaternary drainage area. Each chairperson of the 11 sub-catchment forums identified key water resources and related issues. (Refer to Annexure 2.1.)

❑ **Meeting 2: 23 May 2002 in Clanwilliam**

This meeting focused broadly on the existing functional, institutional and organisational arrangements within the Olifants-Doorn WMA. The roles and functions that these structures could fulfil on behalf of the CMA were also discussed. (Refer to Discussion Document 1 attached as Annexure 3.1)

❑ **Meeting 3: 1 August 2002 in Clanwilliam**

The possible functions and management activities (arranged per functional area) of the Olifants-Doorn CMA were discussed and prioritised according to the needs in the WMA. (Refer to Discussion Document 2 attached as Annexure 4.1.)

❑ **Meeting 4: 19 September 2002 in Clanwilliam**

An overview was given of the possible organisational structure of the Olifants-Doorn CMA. This was compared to the proposed functions of the CMA in order to determine the structure that is best suited to the Olifants-Doorn WMA. (Refer to Discussion Document 3 attached as Annexure 5.1.)

❑ **Meeting 5: 6 November 2002 in Clanwilliam**

The financial implications of the proposed Olifants-Doorn CMA and the phased implementation of the CMA over a period of 10 years, was discussed. (Refer to Discussion Document 4 attached as Annexure 6.1.)

❑ **Meeting 6: 13 November 2002 in Clanwilliam**

All CMA Reference Group members were invited to the NWRS Public Meeting. This meeting formed part of the process to understand the water resource issues and the implementation of the actions required. Input given by the members is contained in the report of questions / issues / comments raised at the NWRS meeting and attached as Annexure 1.4.

❑ **Meeting 7: 20 February 2003 in Clanwilliam**

The first draft of the *Proposal for the Establishment of the Olifants-Doorn CMA* was circulated and discussed.

❑ **Meeting 8: 8 May 2003 in Clanwilliam**

The final draft of the *Proposal for the Establishment of the Olifants-Doorn CMA* was presented to the CMA Reference Group for comment and accepted for presentation to the Minister with a few minor changes.

Records of the meetings of the Olifants-Doorn CMA Reference Group can be found in Annexure 1.2.1 to 1.2.8. A complete list of all members of the CMA Reference Group is attached as Annexure 1.3.

Meeting 9, which will take place on 7 August 2003, will focus on the role of the Advisory Committee in the CMA process. Nominations will be requested for two people to represent the interests of the Olifants-Doorn WMA on the Advisory Committee. The progress with some of the development projects in the area (such as the WODRIS project which looks into the raising of the Clanwilliam Dam wall) will also be discussed.

Discussions on the role and functions of the CMA Governing Board will form part of meeting 10, which will take place in November 2003. Nominations for people from the Olifants-Doorn WMA to serve on the Governing Board will be made. Time will also be allocated to debate the capacity building and development options for resource-poor farmers in the area. The conclusion of the IWRM project will most probably also be discussed.

1.2 Approach to engagement, capacity building and empowerment

Public engagement was obtained by instituting as many interactive discussions and opportunities for sharing information as possible. This was done by means of:

- ❑ Regular forum meetings. In addition to discussions on a range of issues associated with IWRM and the implementation of the National Water Act, forum meetings were used to provide feedback on the CMA establishment process and to obtain information on key issues that should be addressed by the CMA.
- ❑ Educational fact sheets were used to provide information on specific subjects as requested by forum members.
- ❑ Media coverage, in the form of press releases and advertisements, as well as radio announcements. A special emphasis was placed on the use of local media.
- ❑ Preparation and distribution of information documents and newsletters.
- ❑ Discussions on the CMA establishment process at meetings of irrigation boards, Water User Associations, farmer associations, etc.
- ❑ Follow-up contact with stakeholder groups prior to meetings. To ensure follow-up and capacity building, specific attention was paid to representatives from farm labourer and resource-poor farmer groups.

During 2002, two capacity building programmes were initiated to empower forum members and other stakeholders to actively participate in IWRM issues, as well as the process of developing the CMA proposal. It is expected of these participants to be at the forefront in the fight against poverty. These programmes were continued in 2003 and mechanisms are being set in place to repeat the programmes in order to reach out to as many stakeholders as possible. The progress on these capacity building programmes is highlighted in the executive summary and newsletters drawn up for these programmes and attached as Annexure 1.5.1 and 1.5.2

1.2.1. Communication Needs

An initial analysis of the communication needs was done by seven of the eleven sub-catchment forums during October 2001. (A copy of the questionnaire can be found in Appendix B of Appendix 1.6.) This was done as part of the IWRM project's second phase of work. The communication vehicles required were ranked in the following order of priority:

- (i) Newsletters
- (ii) Pamphlets (fact sheets)
- (iii) Meetings / workshops
- (iv) Newspaper articles
- (v) Radio
- (vi) Street theatre
- (vii) Billboards
- (viii) Television
- (ix) Posters
- (x) Website

Additional communication vehicles identified, included:

- ☐ Talks / presentations at meetings of a specific target audience such as farmer associations, woman's organisations, WUAs, etc.
- ☐ Learner awareness:
 - School visits to borehole sites, water purification plants, etc.
 - School projects and competitions.
 - Water Education 2020 Programme, including water audits.
 - Water Week activities.
- ☐ In-depth articles placed in farming and engineering magazines / newsletters.
- ☐ Articles in existing local newsletters distributed by various organisations in the area.

1.2.2. Communication Activities

From the information gathered by means of the questionnaire mentioned above, a number of communication activities were initiated. Examples of all of these are found in Annexure 1.6.1.

☐ **Brochures and Newsletters**

During September 2001, a brochure was compiled that provided a simplified explanation of the CMA Establishment Proposal and process. This brochure was made available in English and Afrikaans. Copies of this brochure were handed out at forum meetings to provide background information for the public meeting held in Clanwilliam on 13 November 2001, where the Olifants-Doorn CMA Reference Group was elected.

The first WMA newsletter for the area was compiled during February 2002 (attached as Annexure 1.6.2). The newsletter was written in English and Afrikaans and provided information on issues such as the boundaries of WMAs; the definition of a catchment; the importance of water conservation and demand management; the role and functions of a water user association; the contact details of the Olifants-Doorn CMA Reference Group Members; and the process to be followed for the establishment of a CMA.

Other newsletters were also published during 2002 and 2003. These were mainly dedicated to information related to IWRM, including the main principles of the National Water Act (Act No. 36 of 1998) and other key elements of the IWRM Project. Copies of these are attached as Annexure 1.5.2

❑ **Media Communication**

During the period October 2001 – March 2002, a number of press releases were compiled as part of the IWRM project. All press releases were issued under a letterhead specially designed for communication purposes in the Olifants-Doorn WMA (refer to Annexure 1.6.1).

Press releases were e-mailed or faxed to the relevant media. This was then followed up with a telephone call to determine whether the press release had been used and/or whether any follow-up information was required.

Personal contact was made with the local radio station, Radio Namakwa, on a weekly basis. Possible interviews were suggested and relevant questions (drawn up by the consultant in collaboration with the person being interviewed) were then supplied to the interviewer.

1.2.3. Needs Analysis workshop

A “**Needs Analysis Workshop**” was held on 24 April 2002 with members of three forums: Ceder-Doorn, Upper (Bo) Olifants and Middle (Middel) Olifants. The report on the workshop is attached as Annexure 1.7. The members identified the following focus areas for capacity building:

- ❑ Key legislative concepts (National Water Act and CMA functioning)
- ❑ Guidance on the CMA establishment process
- ❑ Roles of various role players in the process of establishing the CMA
- ❑ Role of forums after CMA establishment
- ❑ Communication and feedback
- ❑ Consensus building
- ❑ Management of conflict (Conflict resolution)
- ❑ Administrative skills (e.g. taking of minutes and writing of reports)
- ❑ Business plan writing skills

1.2.4. Secretarial services

To enhance the sustainability of and provide administrative support to the forums, a secretary was appointed for each forum. Their remuneration was kindly funded by Danida. The secretaries were also encouraged to attend the CMA Reference Group meetings. A number of courses in administration (refer to Section 1.2.5) were presented to build the capacity of the secretaries.

It soon became clear that there is a need for an administrator/secretary to co-ordinate the overall activities of the forum secretaries, specifically with regard to the following matters:

- ❑ Compilation of minutes and the management of forum activities;
- ❑ Logistical arrangements for the CMA Reference Group meetings;
- ❑ Logistical arrangements for the capacity building programmes;
- ❑ General support to the DWAF and Working for Water offices in Clanwilliam.

A temporary post was created and filled in February 2003.

1.2.5. Secretarial workshop

A two-day **training workshop** for the **secretaries** of each catchment forum was held in Clanwilliam during April 2002. The workshop commenced with each forum chairperson attending the first half-day of the workshop as an introduction. The report on the workshop is attached as Annexure 1.8. The course included the following units:

- ☐ An introduction to the National Water Act
- ☐ Olifants-Doorn Water Management overview.
- ☐ Catchment forum dynamics.
- ☐ Introduction to administration (taking of minutes and correspondence).

Individual contact and support was maintained with chairpersons and secretaries to ensure capacity building. Another two-day follow-up administration course was held during March 2003. In this instance the Catchment Forum secretaries joined the Catchment Champions Programme.

1.2.6. Forum Champions Programme

During 2002, DWAF and Danida embarked on a capacity building programme among members of the previously disadvantaged groups within the catchment forums. The programme had the explicit purpose of developing champions within the context of Integrated Water Resource Management (IWRM). The primary purpose of these proposed champions is to popularise DWAF's vision on IWRM and to build capacity among other members of the forums and the community at large. The nature of the programme is such that it can result in careers for the participants. The above-mentioned objectives were explained in detail at all forum meetings.

Selection of the participants was done within the forums under the guidance of DWAF. The basis of the selection was as follows:

- ☐ A commitment to the concept of IWRM.
- ☐ A willingness to capacitate other members within the forums.
- ☐ A willingness to promote and popularise the vision of IWRM.
- ☐ Availability to attend a number of 2 - 3 day long workshops over a period of nine months.

The aim of the course was to capacitate and empower previously disadvantaged individuals to promote the concept of IWRM. The following modules were presented:

- ☐ Planning (Green Community Programme)
- ☐ Water resource management and the water cycle
- ☐ Communication and conflict resolution skills
- ☐ Leadership and facilitation skills
- ☐ Institution-related knowledge
- ☐ Administration

1.2.7. Participatory Development Project Cycle Management (PCM) for IWRM.

One of the capacity building programmes that ran concurrent with the process of writing the proposal for the establishment the Olifants-Doorn CMA, was the PCM aimed at prompting the understanding of IWRM. Participants for the programme were recruited on the basis of the following criteria:

- ☐ A history of community development work.
- ☐ A commitment to future community empowerment.
- ☐ Availability to attend two-day workshops over a period of seven months.
- ☐ A minimum academic qualification.

Potential participants were required to complete a questionnaire assessing their understanding of the role that water can play in poverty eradication and other water related issues. The aims of the programme was:

- ☐ To provide the necessary skills to stakeholders in the Olifants-Doorn WMA so that they can identify and develop programmes/projects that focus on water and poverty alleviation issues. The skill being transferred is the use of Participatory Developmental Project Cycle Management techniques for such programmes.
- ☐ To develop common understanding among the key participants / stakeholders regarding issues concerning the role of water in the alleviation of poverty and other related issues, such as

gender and empowerment (as embodied in the National Water Act under the section “*Equity and redressing past inequities*”).

- ❑ To contribute, through this process, towards improved co-operative governance at WMA level.
- ❑ To place the human dimension at the centre of development.
- ❑ To establish a dialogue between government departments at national, provincial and local level.

The outcomes of the modular training programme were:

- ❑ A series of project proposals that address a broad spectrum of issues related to equitable socio-economic development in the Olifants-Doorn WMA and the role of water in the process.
- ❑ The possible incorporation of these projects/actions into the business plan(s) of DWAF and other participating departments and government institutions.

A questionnaire to test Reference Group members’ improved knowledge on IWRM was distributed at the Reference Group meeting held on 7 November 2002. The outcome of the questionnaire is attached as Annexure 1.9.

1.2.8. Participation by forum members

One of the aims of the CMA process is to capacitate forum members so that they are able to actively participate in all discussions relating to water matters. Their valuable input is very important in the CMA’s endeavour to address issues at grassroots level and maintain continued community support.

However, participation in discussions by historically disadvantaged individuals is often hampered by the fact that they do not always have the necessary knowledge and understanding of water-related issues. This can also be attributed to the fact that ownership of water rights in the Olifants-Doorn WMA has been and is to a large extent still vested in the previously advantaged group. As land reform is a national priority, this challenge is being addressed by the government at the moment – a process will strengthen the situation of resource-poor farmers. These challenges were addressed by the capacity building programmes (refer to Sections 1.2.6 and 1.2.7). The programmes are geared to equip forum members from historically disadvantaged backgrounds with certain skills to enable them to participate meaningfully in forum meetings.

The Catchment Forums were encouraged to participate in a Micro-Projects Programme and between R3 000 – R5 000 was made available to each forum to create awareness or solve any water related issue. The idea was to allow forums to initiate and run with their own micro-projects, thereby encouraging further public participation, while simultaneously creating water awareness. Champions identified by the forums were expected to take the leading role in identifying, implementing and managing these projects. They were thus able to put into practice some of the theoretical knowledge obtained by means of the capacity building programmes. Projects identified included water awareness competitions at schools; community river clean-ups; building a bridge and the celebration of Water and Weedbuster Week.

1.2.9 Participation on National Project Steering Committee

The National Project Steering Committee for the IWRM project is responsible for the monitoring and evaluation of the project in the three WMAs mentioned previously. The process to engage stakeholder participation and to proceed as far as possible with the proposal for the establishment of the CMA in the Olifants-Doorn WMA, is one of the outcomes of this project.

The National Project Steering Committee consists of representatives from the National Department of Water Affairs and Forestry, Danida and representatives from stakeholder groups for the Olifants-Doorn, Mvoti/Mzimkulu and Crocodile West-Marico WMAs.

At the CMA Reference Group meeting held on 23 May 2002, Messrs Harold Roberts and John Roux were elected to represent the Olifants-Doorn WMA on this national committee. To date they attended two meetings held on 11 September 2002 and 18 February 2003 in Pretoria. During these meetings the representatives of the CMA Reference Group were given the opportunity to provide

feedback, as well as their personal view on the progress with the various projects in the Olifants-Doorn WMA. Copies of their reports are attached as 1.10.1 and 1.10.2.

Mr. Roberts also attended the Review Workshop for the IWRM project held in Cape Town on 23 and 24 February 2003.

Because of the successes achieved in the Olifants-Doorn WMA, the National Steering Committee decided to allocate more funds to the area than originally approved. Despite being the smallest (in terms of water availability) of the three WMAs supported by the IWRM project, it eventually received the most funding because of its successful implementation of all aims of the project.

1.3 Representation

The challenge of transformation of all aspects of South African society is in line with the Constitution of the Republic of South Africa (Act No. 108 of 1996). This is an enormous task that requires effective harnessing of the voices of all citizens in all aspects that affect their lives. Securing effective representation in new institutions is particularly challenging, as it requires engagement with the full depth of our history and places heavy demands on people in terms of time, personal development and institution building. It is also an expensive process, as many previously disadvantaged individuals and communities do not have the financial capacity to travel to meetings at their own cost, or take time off from work (and lose some income) to attend meetings.

Representivity is intimately linked to on-going capacity building and information sharing activities, and draws its strength from a growing awareness of the stake each water user and interest group has in the IWRM framework established by the National Water Act (Act No. 36 of 1998) and promoted in the Olifants-Doorn WMA by means of the IWRM project.

In spite of these hurdles, the process of achieving representation on catchment forums and the CMA Reference Group in the Olifants-Doorn WMA has been quite successful, especially with regard to racial representivity. Gender representivity remains a problem, despite concerted efforts to engage women in the CMA establishment process. The CMA will seriously have to address this issue.

In order to address the issue of gender representivity, a number of catchment forums made a concerted effort to draw women and disabled people into their activities. One such action included the co-option of the secretaries of the catchment forums (which consist of 10 women) onto the Olifants-Doorn CMA Reference Group. A breakdown of the race and gender representivity of each forum is available on request from DWAF's Clanwilliam office.

1.3.1 Forums

In general, membership of a catchment forum consists of the following categories (refer to Annexure 1.11 for details on membership of each catchment forum):

- ☐ Farmers' Associations.
- ☐ Resource Poor Farmer organisations.
- ☐ Local authorities (B municipalities).
- ☐ District Municipalities (C municipalities).
- ☐ Industry and business.
- ☐ Water User Associations.
- ☐ Conservation and environmental organisations.
- ☐ Community action committees.
- ☐ Ratepayers' Associations.
- ☐ Reconstruction and Development Forums.
- ☐ Organised labour.
- ☐ Nature Conservation organisations.
- ☐ Working for Water Programme.
- ☐ Department of Planning, Local Government and Housing: Provincial Administration of the Northern and the Western Cape.
- ☐ Department of Agriculture: Provincial Administrations of the Northern & Western Cape.

- ❑ DWAF (Northern and Western Cape).

1.3.2 CMA Reference Group

After agreement on the representation of the CMA Reference Group during the public meeting held on 13 November 2001 (refer to Section 1.1.2), the following division of representation was accepted:

❑ Sectoral			
Forestry	2		
Workers Unions	2		
Tourism	2		
Industry/Business	2		
Informal Business	2		
<i>Commercial Agriculture:</i>			
Northern Cape	2		
Olifants River	2		
<i>Small Farmer Associations:</i>			
Northern Cape	2		
Olifants River	2		
Community	2		
Water Users Associations	3		
Conservancies	2		
		Subtotal:	25
❑ Geographical – Catchments Forums			
Upper (Bo) Olifants	2		
Ceder-Doorn	2		
Ceres-Karoo	2		
Hantam	2		
Koue Bokkeveld	2		
Lower (Laer Olifants	2		
Middle (Middel) Olifants	2		
Nama-Karoo	2		
Sandveld	2		
Namaqualand South	2		
Witzenberg	2		
		Subtotal:	22
❑ Local Government			
Matzikama Municipality	1		
Cederberg Municipality	1		
West Coast District Municipality	2		
Hantam Municipality	1		
Namakwa District Municipality	1		
Witzenberg Municipality	1		
Boland District Municipality	1		
		Subtotal:	8
❑ Overarching Bodies			
Western Cape Nature Conservation Board	1		
Northern Cape Nature Conservation	1		
<i>Department of Water Affairs and Forestry:</i>			
Northern and Western Cape	2		
Agri - Western Cape	1		
Agri - Northern Cape	1		
Surplus People Project - Small farmers	1		
<i>Department of Agriculture:</i>			
Northern and Western Cape	2		
National Department of Land Affairs	1		
<i>Dept. of Planning, Local Gov. and Housing:</i>			
Northern and Western Cape	2		
<i>Department of Tourism:</i>			
Northern and Western Cape	2		
<i>Department of Health:</i>			
Northern and Western Cape	2		
<i>Working for Water:</i>			
Northern and Western Cape	2		
		Subtotal:	18

Efforts to encourage participation by members of historically disadvantaged groups included follow-up contact, transport assistance, contact with community-based organisations and non-governmental organisations and additional capacity building activities. This is one of the reasons why the number of representatives on the Reference Group increased with time. A breakdown of the race and gender component of the CMA Reference Group, as on 8 May 2003, forms part of Annexure 1.3.

1.4 Stakeholder comment on the CMA establishment process and submission of this proposal

This Proposal was developed systematically in accordance with the process agreed upon at the public meeting held on 13 November 2001. The Proposal is based on discussions and agreements reached at subsequent CMA Reference Group meetings. A total of 8 meetings were held with the CMA Reference Group to compile and finalise this proposal for the establishment of the Olifants-Doorn CMA.

During the public Reference Group meeting where the final draft of the Proposal was discussed, every person present unanimously agreed that those people who initially participated in the CMA process without any prior knowledge on water matters, were adequately capacitated so that they, over a period of time, could understand and actively participate in discussions. They specifically mentioned the culture of discussion that was established, and appreciated the fact that issues not directly related to water were often also resolved or referred to the correct organisations/ departments for further discussion.

With this consensus as point of departure, they assured the Regional Director of DWAF: Western Cape, Mr Rashid Kahn, that he could truthfully report to the Minister of Water Affairs and Forestry that the CMA process in the Olifants-Doorn WMA was truly consultative and representative.

Reference Group members felt strongly that this culture of discussion and involvement should be pursued once the CMA is in place. They proposed that the integrated structures established during the CMA process (forums, reference group, champions programme etc) should be used to resolve pressing issues such as land reform and the dire need for additional capacity building programmes.

It is envisaged that the CMA Reference Group will continue to meet after the submission of this proposal and for the following reasons:

- ☐ To interact with an Advisory Committee on the representation of the CMA Governing Board.
- ☐ To discuss any relevant water resource management issues, such as water use charges and water resource development.

In addition, the IWRM project will be concluded during one of the CMA Reference Group meetings.



2. DESCRIPTION OF THE OLIFANTS-DOORN WATER MANAGEMENT AREA

2.1 General

The Olifants-Doorn Water Management Area has been proclaimed in Government Notice No 20491, dated 1 October 1999 as Water Management Area No. 17 and is described as follows:

“The WMA is bounded by the Berg and the Breede WMAs to the south, the Gouritz WMA to the southeast, the Lower Orange WMA to the east and north and the Atlantic Ocean to the west. It lies on the west coast of South Africa, spread across two provincial jurisdictions, namely the Western Cape and the Northern Cape Provinces.”

The central, western and southern portions of the Olifants-Doorn WMA are situated in the Western Province, while the north-eastern portion lies in the Northern Cape Province. During the course of 2002, a request was made to change a section of the border of the WMA, to the provincial rather than the catchment boundary. This is described in more detail under Section 2.1.2.

The major river in the WMA is the Olifants River, of which the Doring River is the main tributary. There are also a number of small coastal rivers or water-courses to the north and south of the Olifants River estuary. The Olifants-Doorn WMA is predominantly a winter rainfall region, with only the south-eastern region receiving more than 300 mm of rain annually.

The mountains in the southern region receive up to 1 500 mm rain annually, while the northern region experiences very dry conditions with less than 100 mm rain per annum. In excess of 90 percent of the water is used for irrigation in the summer months, making bulk water storage an essential component of water resource management.

For this reason several options for further dam development have been considered, including:

- ☐ Proposed Aspoort Dam in the upper Doring River
- ☐ Proposed Melkboom Dam in the lower Doring River
- ☐ Raising the wall of the Clanwilliam Dam (this option is seen as the most viable option in terms of minimising further impact on the environment)
- ☐ Proposed Grootfontein Dam in the Upper Olifants River
- ☐ Increasing the development of commercial farm dams.

Both the Olifants and the Doring Rivers are important from an ecological perspective. They contain several species of endemic fish, some of which are critically endangered. Similarly the Olifants River estuary is ecologically sensitive, with vegetation, fish and bird-life that are of both national and international importance. The estuary is still in a relatively pristine or natural condition.

One of the most unique products of this area, i.e. “rooibos” (red bush tea), grows on dry land and is not irrigated at all. This indigenous shrub grows on the Table Mountain sandstone in the higher rainfall areas of the catchment where occurs.

The Olifants-Doorn WMA is shown in Figure 2.1 below.

Figure 2.1: The Olifants-Doorn Water Management Area (WMA)



2.1.1 Borders of the Olifants-Doorn WMA

At two of the CMA Reference Group meetings, the members considered and proposed that the north-western border of the Olifants-Doorn WMA with the Lower Orange WMA (encompassing the F6 and E3 drainage areas) be changed so that it closer resembles the provincial boundaries.

The reasoning is that there are no significant surface water resources in these two areas and that the community of Molsvlei obtains its water from one groundwater resource in the Olifants-Doorn WMA, namely the Bitterfontein/ Rietpoort desalination scheme. From a water resource point of view, the ring fencing of the areas based on primary catchment area boundaries is therefore not of critical importance.

A proposal was made to include the quaternary drainage area F50D into the Olifants-Doorn WMA. This proposal was discussed with the South Namaqualand Forum on 6 November 2002 and the proposal was put forward to DWAF in Pretoria on 11 December 2002. The proposal was accepted by DWAF on 20 January 2003.

Figure 2.2: Change in Border of the Olifants-Doorn and Lower Orange WMAs



2.2 Existing water supplies per quaternary drainage area

2.2.1 General overview

The drainage regions in the Olifants-Doorn WMA have been grouped in accordance with classifications as used in the Water Research Commission Report, *"The Surface Water Resources of South Africa, 1990"*. The WMA consists of primary drainage region E and secondary catchments F6 and G3.

The southern coastal strip (G3) is known as the Sandveld. This is a semi-arid region, with annual rainfall ranging from 100 mm to 500 mm. The major land use is for livestock farming, while potatoes are grown in the central region. Irrigation is from groundwater. The main towns are Elands Bay, Lamberts' Bay, Doring Bay, Strandfontein and Graafwater. All the towns except Graafwater and Strandfontein are supported by commercial fishing industries and tourism. The towns and rural communities rely on groundwater (abstracted from the deep sandy deposits that overlie the bedrock in the area) for their water supply.

The northern coastal strip (F6) has an annual rainfall of less than 100 mm. The only major town is Bitterfontein and the land is used mainly for livestock farming. Namakwa Sands, mining heavy sands minerals, is situated in this region and there are marine diamond mining activities along the coast. Bitterfontein obtains its water from groundwater and due to its brackish nature this water has to be desalinated.

The Olifants River (E1, E33G, E33H) rises in the mountains along the southern boundary of the WMA and flows north between high mountain ranges for about a hundred kilometres to the Bulshoek Barrage. Mountain ranges along the west are the Witzenberg, Groot Winterhoek and Olifants River Mountains. Along the east are the Koue Bokkeveld Mountains and the Cederberg, which consist mainly of Table Mountain Group sandstones. Downstream of Bulshoek Barrage the valley floor becomes progressively wider for some 30 km and then opens out into a wide plain across which the river meanders for about 70 km to the ocean. Major towns in this area are Citrusdal, Clanwilliam, Klawer, Vredendal, Vanrhynsdorp and Lutzville.

Numerous farm dams have been constructed in the upper reaches of the Olifants River Valley. Clanwilliam Dam, which is the major dam in the WMA, is situated on the Olifants River upstream of Bulshoek Barrage. This dam provides water to local authorities, the Clanwilliam canal scheme, to irrigation farmers who draw water from the river and especially to the Olifants River Government Water Scheme around Vredendal. Water is released from the Clanwilliam Dam to the Bulshoek Barrage, from where it is distributed by means of an extensive canal system to downstream towns and irrigation farmers. Land along the Olifants River is intensely cultivated. In the headwaters of the Witzenberg Valley, deciduous fruit and vegetable crops are cultivated. Along the upper reaches of the Olifants the main crop is citrus, while along the lower reaches the main crop is grapes (wine, table and raisins).

The Hol River (E3), which drains the north-western portion of the WMA, flows into the Olifants River between Vredendal and Lutzville. Its main tributaries are the Kromme, the Hantams, the Sout and the Vars Rivers. This river system drains an area of more than 17 000 km², but the mean annual precipitation is generally less than 200 mm and the water is very saline. The land is used mainly for livestock farming. Towns in the catchment of the Hol River are Nuwerus and Loeriesfontein, both of which rely on groundwater for their water supply.

The catchment of the Doring River (E2) is fan-shaped and covers an area of 24 000 km². It has a large number of tributaries, including the Groot, Tankwa and Oorlogskloof Rivers. The Groot River catchment (E21) includes the plateau of the Koue Bokkeveld near Ceres. This region has been extensively developed for the cultivation of deciduous fruit and a large area of land is irrigated from a number of farm dams. The Tankwa River catchment (E23) is situated in the dry Ceres Karoo. Another major dam in the Olifants-Doorn WMA, the Oudebaaskraal Dam, is situated on the Tankwa River. This dam is privately owned and is used for the irrigation of lucerne and pastures downstream. The rest of the Doring River catchment is generally arid. Small areas of land are irrigated for lucerne and vegetables, and sheep farming is the predominant land use. The only large urban centres in the region are Calvinia and Nieuwoudtville. Water is supplied to Calvinia by means of a dam in a tributary of the Oorlogskloof River, as well as boreholes. The Oorlogskloof River becomes the Koebe River, which is a tributary of the Doring River.

As can be seen from the above, irrigation is the major water user in the Olifants-Doorn WMA. Irrigation is well developed with new areas for irrigation being investigated. Approximately 20 000 ha is under irrigation in the Olifants River Catchment and 10 000 ha is under irrigation in the Doring River catchment. There is limited forestation in this region and limited alien infestation occurs.

According to the NWRS, compulsory licensing in the Olifants-Doorn WMA is scheduled for 2006. This process is important to ensure the equitable and sustainable allocation of water after taking into

account the requirements of the Reserve and after steps have been taken to ensure that resource-poor farmers have adequate access to water.

As part of the capacity building programme, each catchment forum in the WMA was requested to provide a synopsis of the water resources in its area. These reports were presented by the respective chairpersons at the CMA Reference Group meeting held in February 2002 and are attached as Annexure 2.1. The information that follows is listed per forum area as presented by the chairperson's of these areas – and therefore does not necessarily reflect the quaternary drainage areas.

2.2.2 Sandveld Area (G30)

Agriculture is the largest water user in the area and almost all water for agriculture is obtained from groundwater resources. The fastest growing development is taking place in the Langvlei (G30F quaternary drainage area) where the cultivation of potatoes for one of the largest fast-food franchises in South Africa may possibly lead to the over-exploitation of existing groundwater resources. Large quantities of seed potatoes, which is important to the SA potato industry are also produced in the Sandveld. A study to improve monitoring of groundwater consumption in order to determine a groundwater reserve, commenced in 2002. (More information on this study can be found in Section 2.5.12.)

The West Coast District Municipality supplies domestic water to Strandfontein and Doring Bay with a pipeline scheme from the Olifants River Government Water Scheme. All other towns (including the towns of Graafwater, Lamberts' Bay and Elands Bay) rely on groundwater for domestic consumption. Schemes to extract additional potable water from the Olifants River were investigated and found not to be viable.

Only a few rivers in the area have a sustained flow. All rivers flow in a north-westerly direction towards the Atlantic Ocean.

2.2.3 Witzenberg Area (E10A – E10B)

This catchment area stretches from the source of the Olifants River in the south to the point at Keerom Farm in the north where the Olifants River enters the Citrusdal Valley. This area is very mountainous and incorporates many mountain streams, most of which dry up during the summer months. Snow and heavy rainfall may occur during winter.

The average rainfall for the area is in excess of 800 mm per annum. Very little water can be drawn from any stream during summer, with the result that water has to be stored during the winter for summer use. Few groundwater resources are available and dams are thus the only dependable way of ensuring a source of water.

Deciduous fruit, vegetable, forestry and livestock farming are the main agricultural activities. This type of farming is labour-intensive and well over 4 000 people are employed during the year. The permanent community living in the area totals approximately 10 000 – all requiring water for domestic use. There have been years when water had to be rationed during summer.

2.2.4 Upper (Bo) Olifants area (E10C – E10F)

This catchment area stretches from downstream of the Witzenberg Plateau to the top end of the Clanwilliam Dam. The Olifants River originates in the Witzenberg Mountains and is fed by numerous small mountain tributaries along the way. The most important of these are the

- ❑ Hex River;
- ❑ Boontjies River;
- ❑ Noordhoek River; and
- ❑ Tee River.

If managed correctly, the Boontjies River has the potential of being developed into an excellent source of surface water.

The main town in the area, Citrusdal, has a water allocation for direct abstraction from the Olifants River. This is supplemented during the summer months (when the flow in the Olifants River is low) by groundwater from boreholes at Boschkloof.

The Citrusdal Irrigation Board (in the process of being transformed to a Water User Association) was established in 1960 and manages the water used for agricultural purposes by its members who are situated along the Olifants River to the top end of the Clanwilliam Dam, as well as at Allandale.

2.2.5 Middle (Middel) Olifants area (E10G – E10J)

This catchment area lies between the Clanwilliam Dam and the Bulshoek Barrage. In addition to the water obtained from these two dams, water is abstracted directly from the Olifants River, as well as from the following tributaries of the Olifants River:

- ❑ The Rondegat River, which flows directly into the Clanwilliam Dam. This river supplies water to a large number of farmers and a small weir has been constructed in the river to abstract water for irrigation purposes.
- ❑ The Jan Dissels River, which flows into the Olifants River $\pm$ 3 km downstream of the dam wall. The town of Clanwilliam obtains a portion of its water from a weir in this river.
- ❑ The Seekoeivlei River, which flows into the Olifants River approximately halfway between the Clanwilliam Dam and the Bulshoek Barrage.

The Clanwilliam Irrigation Board obtains its water directly from the Clanwilliam Dam. This is done by means of a canal that was built in 1940 and which is at present being utilised to its maximum capacity. The entire area between the Clanwilliam Dam and the Bulshoek Barrage will be part of the transformed Clanwilliam WUA.

2.2.6 Lower (Laer) Olifants area (E10K; E33G; E33H)

The following rivers are found in the area:

- ❑ Lower Olifants River
- ❑ Hol River (flows into the Olifants River between Vredendal and Lutzville)
- ❑ Kromme River (tributary of the Hol River)
- ❑ Hantams River (tributary of the Hol River)
- ❑ Sout River (tributary of the Hol River)
- ❑ Vars River (tributary of the Hol River)
- ❑ Doring River (just upstream of the bridge on the N7 at Trawal).

The main towns in the area are:

- ❑ Vredendal (obtains its water from the Lower Olifants River Government Water Scheme)
- ❑ Klawer (obtains its water from the Lower Olifants River Government Water Scheme).
- ❑ Vanrhynsdorp (obtains its water from the Lower Olifants River Government Water Scheme).
- ❑ Lutzville (obtains its water from the Lower Olifants River Government Water Scheme).

The Lower Olifants River Water User Association (LORWUA) was established in January 2002. Previously known as the Vredendal Irrigation Board, it obtains its water from the Bulshoek Barrage – a diversion weir with a capacity of 5,3 million m³, which is fed from the Clanwilliam Dam.

The Bulshoek Barrage is used for balancing storage water and feeds an extensive system of canals that convey water for urban consumption and irrigation in the Lower Olifants River Government Water Scheme.

2.2.7 Koue Bokkeveld area (E21A – E21L)

The Koue Bokkeveld encompasses the area east of the Skurweberg, west of the Ceres-Tankwa Karoo mountain range and south of the Cederberg Mountains. The Groot and Riet Rivers (which flow into the Doring River) rise in the east and south respectively, as do some of the minor tributaries to the Olifants River.

The Koue Bokkeveld is situated approximately 1 100 m above sea level, ranging from 2 070 m in the south to 760 m in the north. Drainage takes place in a northerly direction and the rainfall varies between 300 mm and 1 500 mm per year.

The climate is ideally suited for diversified (mixed) farming, especially pitted fruit, potatoes, onions and grazing. Approximately 90% of the people living in the area are, in one way or another, involved in the agricultural industry. It is estimated that 1,7 jobs are created per hectare land cultivated (which equates to 77 jobs per 1 million m³ water). About 16 000 ha land is suitable for cultivation, which could be increased to 23 000 if sufficient irrigation water should become available.

2.2.8 Ceres-Karoo area (E22; E23; E24C – E24H; E24K)

This is an extremely arid area with large areas receiving less than 100 mm rain per year. Very little irrigation, mainly from the Bos and the Tankwa Rivers, which are tributaries of the Doring River, takes place. Water is captured into innovative “saaidamme” (These “crop dams” are small, temporary off-channel storage areas created on cultivated land. They are so small that they capture just enough water for one round of irrigation – mainly for wheat and oats). These “saaidamme” need further investigation and promotion, as the successful crop production generated from this small amount of water could assist in the development of small farming activities in the area.

There is one dam in the Tankwa River (Oudebaaskraal Dam) from which ± 200 hectares of mainly lucerne is irrigated. In Elandsvlei (the area where the Elands-Karoo Irrigation Board is in the process of being disestablished) approximately 400 hectare is irrigated from the Doring River by means of two unlined earth canals.

2.2.9 Ceder-Doorn area (E24A; E24B; E24J; E24L; E24M)

Water in this area is obtained from both surface and groundwater resources. Surface water from the rivers listed below is captured during the winter and stored in off-channel dams for use in summer. These rivers are:

- ☐ Doring River (water pumped and stored off-channel for the Doringbos area)
- ☐ Tra-Tra River (water for small-scale irrigation at Wupperthal)
- ☐ Biedouw River (has to be supplemented with groundwater)
- ☐ Brandewyn River (water for off-channel irrigation to the Agterpakhuis area)
- ☐ Waterval River (water for off-channel irrigation to the Agterpakhuis area)
- ☐ Koms River (irrigation water for Eselbank and Langkloof. This is supplemented with groundwater.)

Water for domestic use is obtained from:

- ☐ The rivers mentioned above (Eselbank, Langkloof, Biedouw and Agterpakhuis);
- ☐ Fountains (Wupperthal);
- ☐ Fountains supplemented with groundwater (Koueberg area); and
- ☐ Groundwater (Nardouwsberg area).

2.2.10 Nama-Karoo area (E33C; E33F)

This is an arid and sparsely populated farming area. Irrigation development occurs in the Unionskraal area and the water is mainly obtained from boreholes. The proposed Vanrhynsdorp Water User Association manages water abstraction in a large part of this area. The town of

Vanrhynsdorp obtains its domestic water from the Lower Olifants River Government Water Scheme, as well as from boreholes.

2.2.11 Hantam area (E31; E32)

The entire Hantam area relies mainly on groundwater for its water supply. The quality is generally not good, and the groundwater is subject to variable yield during periods of drought.

Off-channel storage dams have been built to utilise rainwater when the rivers start flowing. The only “permanent” source of water is to be found in the irrigation dams situated in the vicinity of the Heiveld Sponge. These dams are filled by water from the sponge during the rainy season. “Saaidam” irrigation also occurs in the Oorlogskloof and Hantam River catchments.

2.2.12 Namaqualand South area (E33 and F60)

This area receives less than 100 mm rain per annum. The only major town in the area is Bitterfontein, which relies on groundwater for domestic consumption. This water needs to be desalinated before it can be used. The West Coast District Municipality operates the scheme and the desalination plant at Bitterfontein. The town of Nuwerus is also supplied from this scheme.

2.3 Current and anticipated use

2.3.1 General overview

The population of the Olifants-Doorn WMA (identified as WMA 17 by DWAF), is estimated to be in the region of 104 000 people, of which approximately 50 percent are based in the (small) towns and villages in the area. This estimation was made by the BKS Acres Study (done in preparation for the National Water Resources Strategy). The study further identified that the population is declining at a negative growth rate of -3%. This statement was, however, challenged by the members of the Reference Group during the NWRS meeting, as well as in later meetings. It was requested that these statistics be validated at NWRS level.

The largest towns in the Olifants-Doorn WMA are Vredendal in the Matzikama municipal area, followed by Calvinia in the Hantam municipal area. The location of the towns and local municipalities is shown in Figure 3.1 of Annexure 3.1.

The gender and racial composition of the population in WMA 17 is represented in Figure 3.2 of Annexure 3.1 and is a factor that needs to be taken into consideration in the development of future institutions that will manage water resources.

According to the National Water Resource Strategy (refer to Government Gazette Nr 23711 of 8 August 2002 attached as Annexure 2.2), it is estimated that the Olifants-Doorn WMA requires approximately 373 million m³/annum at a 98% assurance of supply, while the allocable yield available is 335 million m³/annum (see Tables 2.1 and 2.2 below). According to DWAF, the required amount of water could be met by means of further water resource development, especially in the Doring River catchment. One concern, however, is that the Instream Flow Requirements (IFR) to maintain healthy river environments have not yet been fully determined and therefore prevents conclusive judgement on spare capacity.

The 98% assurance of supply (see paragraph above) is used for comparative purposes only and is based on a 1:50 year drought assurance. When licences are issued, the specific assurance of supply for that quaternary sub-catchment in which the application is made, as well as the type of category for which the water will be used (i.e. agricultural, domestic, industrial etc), will be taken into account. This assurance of supply may be less than the 98% used for comparative purposes – especially if the water is not used for domestic water supply.

Tables 2.1 and 2.2 provide a summary of the volume of water required and available in the Olifants-Doorn WMA. These figures correspond with the way in which the WMA was divided for the purpose

of the NWRS, and differ from the quaternary drainage areas described in this Proposal. A copy of the NWRS drainage areas is attached as Annexure 2.3.

Table 2.1 Water Requirements in WMA 17 for Year 2000 (million m³/annum) as per the NWRS

Sub-catchment	Irrigation	Urban	Rural	Mining	Power	Forestation	Total
Koue Bokkeveld	65	0	1	0	0	0	66
Sandveld	35	2	1	0	0	0	38
Olifants	240	4	2	0	0	1	247
Knersvlakte	3	0	1	3	0	0	7
Doring	13	1	1	0	0	0	15
Total for WMA 17	356	7	6	3	0	1	373

Table 2.2 Available Yield in WMA 17 in Year 2000 (million m³/annum) as per the NWRS

Sub-catchment	Natural resource		Useable return flow			Total yield
	Surface water	Groundwater	Irrigation	Urban	Mining	
Koue Bokkeveld	59	5	3	0	0	67
Sandveld	2	30	0	0	0	32
Olifants	196	4	19	2	0	221
Knersvlakte	1	3	0	0	0	4
Doring	8	3	0	0	0	11
Total for WMA 17	266	45	22	2	0	335

More detailed statistics relevant to the Olifants-Doorn WMA can be found in Section D.17.2 of the NWRS. This includes the reconciliation of water requirements and the availability of water by the year 2025 on a “baseline” and “high” scenario. The key aspects identified in the NWRS are described in Section D.17.3 of the said document. The relevant sections of the NWRS are attached as Annexures 2.4.1 and 2.4.2

The registered water use in WMA 17 (as in 2002) is 21,1 million m³ for municipal and 316 million m³ for agricultural use per year. No streamflow reduction activities, such as afforestation, have been registered.

2.3.2 Anticipated water use

The anticipated water use of the Olifants-Doorn WMA will be influenced by:

- ❑ The determination of the ecological reserve. This will enable proper evaluation of development options in comparison to conservation priorities.
- ❑ The improvement of irrigation efficiency and the implementation of demand management.
- ❑ The quantification of water lost in the distribution systems, especially in the Bulshoek canal.
- ❑ Further investigation into the groundwater potential of the Table Mountain Group (TMG) aquifers. This includes the results of the detailed study on the Sandveld aquifers and the possible inter-connectivity to (a) larger TMG aquifer(s).
- ❑ The outcome of the studies being done on various development options, including a dam on the Doring River and the raising of the Clanwilliam Dam wall.

- ❑ The socio-economic development needs: i.e. irrigation development (resource-poor farmers), environmental conservation and eco-tourism.
- ❑ The potential for building more farm dams in the Koue Bokkeveld area and the upper Olifants River catchment.
- ❑ The possibility of re-allocating irrigation water to improve water supply to towns/ villages.
- ❑ The extent to which the eradication of alien invasive vegetation will influence groundwater levels.
- ❑ The possibility of water being transferred to the Berg WMA to augment Cape Town's water supply.
- ❑ The potential effect of HIV/AIDS on population dynamics and the subsequent decrease in water demand.

2.4 Key water resource issues

2.4.1 General overview

The members of the eleven Catchment Forums were requested to draw up a list of their perceived key water resource management issues. These were then discussed and verified at the CMA Reference Group meeting held on 28 February 2002. These discussions played an important role in understanding the water resource issues in the different areas. In addition, members were able to build capacity and relate better to the functions required to manage these resources. Issues identified per forum area, as captured during the process to compile this Proposal, are listed below.

Water resource issues identified by the various Catchment Forums during their forum meetings up to July 2003, have also been included in this section.

Members of the Reference Group and the Catchment Forums have accepted the importance of being involved and giving their contributions and inputs in their local IDP processes, as well as their participation in the WSDPs

2.4.2 Upper (Bo) Olifants

- ❑ Poor quality of drinking water.
- ❑ An inadequate level of service in the supply of water to communities and farms.
- ❑ Water demand management required.
- ❑ Limited availability of water, thus limiting the development of resource-poor farmers; for example the Elandskloof community, who cannot afford to enlarge their dam.
- ❑ Resource-poor communities to be informed of possible subsidy opportunities.
- ❑ Water restrictions always in place. (It was proposed that the storage capacity be increased. If the wall of the Clanwilliam Dam cannot be raised, then a dam in the upper reaches of the Olifants River at Keerom should be considered.)
- ❑ Feedback required on ecological studies done in the 1990's.
- ❑ Administrative delays in changing from irrigation boards to Water User Associations.

2.4.3 Lower (Laer) Olifants

- ❑ Additional reservoir storage capacity is required.
- ❑ The water distribution network should be expanded.
- ❑ The management and allocation of water should encourage the development of agricultural and industrial activities.
- ❑ The needs of small farmers should be addressed. This includes giving advice on how to organise themselves into a formal group (capacity building, education).
- ❑ Water allocations must be made to resource-poor farmers.
- ❑ Resource-poor farmers should obtain more representation in LORWUA's executive committee.
- ❑ Resource-poor farmers must be encouraged to join LORWUA so that they can obtain subsidies.
- ❑ Water supply to Ebenhaeser needs to be upgraded.

2.4.4 Koue Bokkeveld/ Witzenberg Valley

- ❑ The geographic location of the Witzenberg Valley means that it shares some issues with the Breede WMA.
- ❑ The Witzenberg Valley is the source of the Olifants, Doring (via the Riet and Groot Rivers) and the Breede River.
- ❑ The increase in the volume of water being stored in the upper reaches of the Kruis, Houdenbeks and Leeu Rivers, has a negative cumulative impact on the environment – especially during the summer months and periods of drought.
- ❑ The burning of tyres and plastic by farmers to prevent frost causes air and water pollution.
- ❑ Maintenance issues to be addressed; for example leaks at Op-die-Berg.
- ❑ Water pollution in the Olifants and Koekedouw Rivers poses a threat to public health. The source of this pollution must be identified.
- ❑ There is lack of commitment towards water conservation and water demand management by the local agricultural sector.
- ❑ The influence of fertilizers on the runoff etc during the summer planting season must be closely monitored.
- ❑ The development of virgin land (especially renosterveld and pristine mountain fynbos) for agricultural purposes should be discouraged.
- ❑ Veld fires must be controlled and managed better.
- ❑ A management plan for the clearing of invasive alien species in the valley must be implemented in co-operation with the Working for Water programme.
- ❑ Wetlands are often drained by the agricultural sector as a means to additional sources of water.
- ❑ Greater water awareness to be created in the community, as well as job creation and education.

2.4.5 Namaqualand South / Nama-Karoo / Hantam

- ❑ The better management and development of groundwater is required. Thorough forward planning in the use and development of groundwater is required.
- ❑ Special attention should be given to the supply of water to resource-poor farmers. Help should be provided to upcoming and existing resource-poor farmers. The following proposals were made:
 - Determine all available land and water resources. This would require co-operation between the Departments of Land Affairs and of Water Affairs and Forestry.
 - Greater representation by resource-poor farmers in decision-making forums. Commercial farmers should be encouraged to join Resource-poor Farmer Associations.
 - Subsidies should be made available to small and resource-poor farmers (e.g. towards drilling costs) so that water could be made available to such farmers, even if they do not fall within the jurisdiction area of a WUA.
 - WUAs should assist resource-poor farmers with their applications for subsidies and the process of allocating water.
 - SPP can play an important role in this process.
- ❑ Water supply is inadequate, especially in some of the outlying towns, where some experience periods without water (Nieuwoudtville especially). A resource determination is required as a matter of urgency in those areas where communities have little or no water.
- ❑ The water resources of the WMA should be developed and managed to benefit everyone in the WMA.
- ❑ The region is almost exclusively dependent on groundwater. This poor groundwater quality means that desalination is required. This is very expensive. In the Rietpoort area only a small quantity of water of poor quality is available.
- ❑ Trees such as the Prosopis (“muskietboom”) and Eucalyptus are invading river embankments and are using up groundwater.
- ❑ The possibility of rainfall stimulation should be investigated.
- ❑ There should be continuous liaison between the Northern and Western Cape provinces as the catchment area falls within both these two provinces. Roles and responsibilities for government functions (such as the clearing of alien vegetation and the provision of rural water and sanitation services) should be clarified.

2.4.6 Sandveld

- ❑ Information is needed on groundwater quality, quantity, geological formations and the storage capacity of aquifers.
- ❑ Groundwater abstraction must be monitored and managed. Monthly monitoring of the following is required:
 - Level of groundwater in boreholes
 - Water abstracted from boreholes
 - Crops being irrigated (volume of water used per month)
 - Rainfall figures
- ❑ A licensing system is necessary for groundwater abstraction.
- ❑ Farmers should be informed (twice a year) regarding the amount of water available for irrigation before they start to plant.
- ❑ Fair pricing is essential in the CMA establishment process. Costs should be allocated to where it is incurred and the amount of cross-subsidisation should be limited.
- ❑ Information on environmental impact is required (sustainable agricultural practices).
- ❑ The study on the possible raising of the wall of the Clanwilliam Dam should take cognisance of the needs of the towns in the area from Strandfontein to Elands Bay and Redelinghuys, as well as from Ratelfontein along the railway line to Paleisheuwel and Het Kruis.
- ❑ The possibility of a pumping station at Bulshoek Dam should be investigated. (Consideration should be given to the building of a reservoir at Sandkraal, as well as a pipeline through the Klipfontein Pass to Seweputs to connect it with Strandfontein-Elands Bay. This could be done as part of a job creation project.)
- ❑ Alien vegetation should be removed to re-establish wetlands – this will create tourism potential.
- ❑ The possibility of a larger water allocation for Lamberts' Bay in order to promote developments in the tourism industry should be researched.
- ❑ More information is needed with regard to the planning done by the local municipalities for water supply.

2.4.7 Ceder-Doorn

- ❑ Feedback is required on the proposed development of the Melkboom Dam. It may impact the region in terms of:
 - Its effect on existing use
 - Water quality
 - Water quantity
- ❑ Liaison between the Western Cape and Northern Cape provinces should take place in order to address these problems. It is advised that the construction of the dam not take place, as there are better ways of utilising the funds.
- ❑ Water quality. More studies, as well as the implementation of better discharge standards could address this problem. Organic farming should be promoted.
- ❑ Small-scale farming developments (due to the limited water resources in the area) could bring better quality of life to the area. A needs assessment should be done.
- ❑ Job creation: The relative merits of farming and tourism should be evaluated. Farming vs. tourism scenarios should be investigated. Opportunities should be identified and optimised. Infrastructure should be upgraded to improve tourism.
- ❑ Environmental issues: To ensure sustainability, monitoring and the setting of standards should take place in collaboration with the agricultural sector. Water resources in the area could be utilised better and more resources could be developed.
- ❑ Smaller towns in the area should receive priority in ensuring sustainable water supply for domestic, as well as small-scale agricultural purposes.
- ❑ Schools should be encouraged to promote water conservation.
- ❑ The minutes of the forum meeting held on 3 December 2002 provide a detailed needs analysis of the area and should be carefully studied.

2.4.8 Ceres-Karoo

- ❑ Permanent structures should be built in the old Elands-Karoo Irrigation Board's distribution canal in order to operate a sluice system instead of the existing share system ("beurtstelsel"). This will be the only solution to the water problems in the area.

- ❑ The problems that are being experienced at Grootdam need to be attended to.

2.4.9 Middle (Middel) Olifants

- ❑ Farmers cannot use their irrigation quotas because of regular water restrictions.
- ❑ Consideration should be given to the raising of the Clanwilliam Dam wall. Land surrounding the dam has already been expropriated for this purpose.
- ❑ Greater capacity in the Clanwilliam Dam will also make more water available to resource-poor farmers. (Resource-poor farmers could also obtain land via Clanwilliam commonage = 24 hectare.)
- ❑ The Clanwilliam canal was built in the 1940's and it is estimated that approximately 30% of the water is lost in the system. It should be considered to rather distribute the water by means of an 800 mm diameter pipe. This will:
 - Decrease evaporation;
 - Control the amount of water made available
 - Stop water theft
 - Make more water available to resource-poor farmers.
- ❑ The Western Cape Nature Conservation Board has requested that a weir be built in the Rondegat River. This will form a barrier to prevent alien fish species from moving upstream and thus create a safe reserve for endemic fish species.
- ❑ The development of farming opportunities for previously the disadvantaged communities needs attention. Cederberg municipality is looking into the possibility of making land within their area of jurisdiction available for this purpose.

2.4.10 Resource-poor farmers

The plight of resource-poor farmers has been a point of discussion at every CMA Reference Group meeting. Apart from the slow land reform process, their main concern is that sufficient water may not be available to ensure that they become economically viable farmers once the land has been made available. This was the reason why a request for a moratorium on the issuing of new licences was made at one of the meetings. Requests were also made that a share of the water in the area should be set aside for the development of resource-poor farmers.

Criticism was raised against the commercial farmers who seem to be slow in granting resource-poor farmers the ability to become independent farmers. However, it could be argued that it may be more beneficial for a resource-poor farmer to initially be part of an equity scheme, rather than part of a scheme that may fail due to a lack of capacity within the resource-poor farming sector.

Issues such as representation on the CMA Governing Board and the appointment of a developmental officer as one of the first staff members in the CMA structure, were also raised and noted.

Capacity building remains a critical issue that should continuously be addressed. For example, the Forum Champions and PCM programmes (described in Sections 1.2.6 and 1.2.7 respectively) should be continuous processes, rather than short-term programmes aimed at building capacity without providing long-term support to sustain and further develop the knowledge obtained during these programmes.

2.5 Water resource issues being addressed at present

2.5.1 General

The catchment forums, established as part of the public participation process that supports this proposal towards the establishment of a CMA in the Olifants-Doorn WMA, were instrumental in identifying local water resource issues and bringing these issues to the attention of the responsible authorities. In addition, members assisted in obtaining the co-operation and support from their communities with regard to the way in which these issues were and are still being addressed.

2.5.2 Upper (Bo) Olifants

The possible raising of the Clanwilliam Dam, which is under investigation at the moment, could mean that the larger off-stream farm dams could be utilised to alleviate water shortages during dry summer months.

2.5.3 Lower (Laer) Olifants

The community of Ebenhaeser obtain their irrigation water, as well as supplementary drinking water, from the Bulshoek Dam. Due to problems in the canal system, there has been a large fluctuation in the level of the water available at Ebenhaeser, especially during summer months when the availability of irrigation water is critical. The Lower Olifants River Water Users Association (LORWUA) is the implementing agent responsible for managing the canal system. The system also provides drinking water to the towns of Ebenhaeser, Strandfontein, Papendorp and Doring Bay.

In 1925, Ebenhaeser was allocated agricultural water for the development of 150 farmers on plots of 1,8 ha each. By 2002 there were only 50 – 60 active farmers. However, due to the increase in the urban population of Ebenhaeser, the demand for domestic water has increased.

During 2002 the Department of Agriculture in the Western Cape informed the CMA Reference Group that a stabilisation dam would be built during the course of 2003 to alleviate the situation at Ebenhaeser. The dam will collect and store the surplus water that becomes available when peak fluctuations in water supply occur. These peak fluctuations can occur in the canal throughout the year, but especially during winter. The farmers will be able to draw on the water from this stabilisation dam whenever the supply from the canal falls below the required volume. The stabilisation dam will improve the assurance of supply to the 257 ha allocated to the existing 50 – 60 active Ebenhaeser farmers, as well as irrigation water to 8,6 ha of existing private land and 71 ha of existing commercial farming.

The dam is a result of a partnership between the Department of Agriculture, the West Coast District Municipality, the Matzikama Municipality, the Department of Water Affairs and Forestry and farmers at Ebenhaeser. The following funds have been made available for this project:

- ☐ R1,4 million by Ebenhaeser farmers (made available by the Department of Agriculture)
- ☐ R3,5 million by DWAF
- ☐ R340 000 by WCDM
- ☐ Operational costs by LORWUA

The new dam will help to alleviate poverty and facilitate the economic development of Ebenhaeser and is a dream come true for the people of Ebenhaeser who have been struggling to get a dam since 1925.

As an immediate relief measure to the Ebenhaeser community, approximately 5 km of the Ebenhaeser (earth) canal was cleaned and lined with concrete by the Department of Agriculture during 2002 at a cost of R800 000.

2.5.4 Koue Bokkeveld/ Witzenberg Valley

One of the tasks taken on by the Catchment Forum established under the public participation process in this area, is to monitor the distribution of water from the Houdenbeks River. Since then, all conflict situations have been resolved within forum meetings.

Economic upliftment was regarded as the major issue to be addressed in this area. The Op-die-Berg (Droog Voet - Bobo's) Bridge and Nature Reserve Project is an example of a project initiated by the community to create employment opportunities. This was achieved by a local NGO (Aksent) submitting a proposal to the local authorities, various government departments and conservation bodies. The project was routed through the local IDP Process and the Koue Bokkeveld Catchment Forum. In May 2002, the Boland District Municipality granted the project an amount of R55 000.

The main aims of the project was to physically and socially bridge the gap between the two communities at Op-die-Berg, while providing an opportunity to earn a living and at the same time creating environmental awareness around issues such as water, litter and waste. Fifty-five unemployed persons, mostly women, participated in the project. (Another project via DWAF / WfW and Aksent is about to commence in the Koue Bokkeveld, namely a food and land security project that is aimed at benefiting 500 disadvantaged families.)

2.5.5 Namaqualand South / Nama-Karoo

The uncertainty regarding the provision of water services to the communities on the north-eastern border of the Olifants-Doorn WMA was addressed. Refer to Section 2.1.1 for further clarification of this issue.

A project to provide water from the Bitterfontein desalination plant to the communities of Molsvlei, Rietpoort and Stofkraal was fast-tracked because of the involvement of the Catchment Forum and the West Coast District Municipality. At the first CMA Reference Group meeting, members from the Namaqualand South Forum made an urgent appeal to DWAF, explaining their plight and requesting that immediate attention be given to secure adequate water supply to this area.

DWAF took cognisance of the situation and investigated emergency measures to provide water during the December festive season. As an interim relief measure for December, the WCDM managed to install new membranes at the desalination plants. This ensured a minimum volume of water that was able to see the community through the crisis period, thus restoring hope during the festive season.

To address the water shortage in the medium to long term, DWAF approved a major water supply project on 11 December 2001. The project was divided into the following contracts:

- (i) Pipelines through Bitterfontein (by conventional contract)
- (ii) Excavation of pipeline trenches with excavator.
- (iii) Supply of PVC pipes on site.
- (iv) Laying of pipes and backfilling by employing local manual labour.

It is envisaged that the entire R8 million project will be completed by late 2003. The project was preceded by capacity building programmes for small contractors etc.

2.5.6 Sandveld

The rate of agricultural development in the Sandveld area, especially the cultivation of potatoes, is placing a severe strain on existing groundwater resources. Forum members expressed their concern regarding the rate and way in which groundwater is being abstracted, as the danger exists that the groundwater resources in the area may be over-exploited. The rate of abstraction in the Langvlei/Wadrif catchment area is of special concern.

In March 2002, DWAF commenced with an investigation into the sustainable yield from the Langvlei River, as well as the carrying capacity and quality of the groundwater resources in the G30F drainage area. Special attention will be given to interaction between the Langvlei River, the wetland area and the groundwater resources. These investigations will enable DWAF to determine the ecological and basic human reserve.

Following this initial study, it is envisaged that the study area may be expanded to include the Graafwater G30G quaternary catchment. Pending the success of these investigations, further studies to include other sensitive catchments in the Sandveld area may also be approved.

Attention will be given to water losses caused by evaporation and irrigation methods. (See 2.5.12.) The quality and quantity of groundwater found in the various geological formations in the catchment area will also be investigated.

2.5.7 Ceder-Doorn

Water supply and sanitation needs still exist in the Wupperthal area. It is receiving attention through intervention by the local authorities and the subsidy schemes available from DWAF.

Water supply to Elizabethsfontein Primary School is still outstanding due to some policy issues within DWAF.

The WODRIS study regarding irrigation development possibilities with water from the Lower Doring and Olifants Rivers, as well as groundwater, is still in progress and will be completed by September 2003.

2.5.8 Ceres-Karoo

The disestablishment of the Elands-Karoo Irrigation Board has not taken place yet, but DWAF is working on such a proposal to the Minister. The establishment of a possible new Water User Association will then have to be investigated.

It seems as if the proposed establishment of an experimental farm to test the viability of the previously proposed dam in the Doring River / Groot River near Aspoort did not receive any further attention from the Northern Cape Government.

2.5.9 Middle (Middel) Olifants

The transformation of the Clanwilliam WUA is in the process of being finalised.

The raising of the Clanwilliam Dam wall, which will be of great benefit to the area, is still under investigation. The Department of Water Affairs and Forestry (Pretoria) has given the approval for a further investigation into this possibility.

2.5.10 Nama-Karoo

The Minister must still approve the proposed constitution of the Vanrhynsdorp Water User Association. DWAF has given in principle approval to financially assist with the establishment of the new water user association and has built in financial incentives for water user associations executing delegated water resource management tasks or functions.

An information meeting regarding water use registration and water resource management charges was arranged by the Nama-Karoo Forum and held on 28 January 2003.

2.5.11 Hantam

Municipal water supply problems in Nieuwoudtville have been resolved. The Calvinia Agricultural Union requested an information meeting on water use registration and water resource management charges. This meeting took place during February 2003.

During one of the meetings of the CMA Reference Group, a request was made that the CMA investigates the possibility of rainfall stimulation for this area.

2.5.12 Groundwater studies

Within the Sandveld and TMG aquifers of the Olifants-Doorn Water Management Area, a project has been approved to investigate those groundwater resources that are being used for the supply of domestic (municipal) water, irrespective of whether groundwater is the sole source of domestic water

supply or whether it is being used in conjunction with surface water). This study focuses on resource assessment, allocation, monitoring and capacity building. The towns currently receiving attention are Lamberts Bay, Elands Bay, Leipoldville, Graafwater and Citrusdal. This current work links closely with the Resource Directed Measures (RDM) study that DWAF is carrying out in the Sandveld (see Section 2.5.6).

The capacity building is focussed on the Cederberg Municipality, who has to take ownership of the management of its groundwater production boreholes. This entails the measuring and recording of groundwater and chemistry levels, and loading this information onto a database – thereby enabling the rapid assessment of groundwater trends. During May 2003 training in field measurements, data loading and data analysis was provided to the Cederberg Municipal staff. Equipment for measuring groundwater and basic chemistry levels has been supplied to the Cederberg Municipality. The groundwater monitoring software was loaded at Elands Bay, Graafwater, Citrusdal and Clanwilliam during the last week of May 2003. DWAF's Clanwilliam office will have access to all the regional information.

2.5.13 Water Conservation and Demand Management: Cederberg Municipality

As part of the IWRM project, consultants were appointed to draw up a Water Conservation and Demand Management (WC/DM) business plan for the Cederberg Municipality. This plan, as well as guidelines for WC/DM, was developed during 2001. A pilot project to implement some of the aspects proposed in the business plan, was commissioned in October 2002.

The pilot project included, amongst other things, the development of a geographic information system (GIS) model (Clanwilliam), a hydraulic model of the water reticulation network (Clanwilliam), dividing the water reticulation network into a number of zones (Clanwilliam and Citrusdal) and the development of WC/DM awareness material (Clanwilliam).

It is envisaged that the GIS and hydraulic models will optimise information management and enable the more effective management of the water reticulation network, respectively. The ultimate goal of the WC/DM awareness material is to promote optimal and efficient utilisation of water by consumers.

2.5.14 Agricultural water demand management (Pilot Studies)

The effective use of water in agriculture is of the utmost importance as this economic sector is the largest water user in the Western Cape.

On average only 45% of impounded irrigation water reaches the root zone of plants. This inefficiency is generally due to canal losses (15%), on-farm losses (15%) and irrigation losses (25%). Technology to drastically reduce these losses is available. The Department of Agriculture: Western Cape started with tests on four crop types (wine grapes, table grapes, pears and prunes) in its endeavour to establish the optimum water needs for these crops and to optimise water use in terms of kg produce per m³ water. The economic effect thereof will be determined and the results will be used to develop guidelines for the more effective use of irrigation water.

In the Olifants-Doorn WMA, the requirements of the agricultural sector represent 95% of the total volume of water required. Water savings in the agricultural sector is therefore vital to ensure the sustainability of the resource and the ecological reserve, while simultaneously ensuring equitable access to water for new demands, such as from resource-poor farmers. As the availability of water determines the rate of development, any future agricultural or other growth will heavily depend on the effective implementation of water conservation and demand methods, on the way in which water will be re-allocated and on the possibility of additional sustainable, ecologically-sensitive storage facilities.

The Department of Agriculture agreed to extend their pilot study during 2003 to include crops such as potatoes (Sandveld) and grapes (Vredendal) in the Olifants-Doorn WMA.



3. EXISTING INSTITUTIONAL AND FUNCTIONAL ARRANGEMENTS AND CAPACITY IN THE OLIFANTS-DOORN WMA

3.1 General

The functions and capacity of existing organisations in the Olifants-Doorn WMA was discussed during the CMA Reference Group meeting held on 23 May 2002. The Report on the Situational Analysis of WMA 17 (attached as Annexure 3.1) was distributed to the members of the CMA Reference Group for discussion at the mentioned meeting. Members were given the opportunity to change and/or add to the discussion document and what follows is the result of their input.

Existing organisations were also given the opportunity to present a summary of the services they could render on behalf of the CMA. These presentations are attached to the minutes of the meeting at which the presentations were made (Annexures 1.2.1 – 1.2.8) and not in one specific annexure. To simplify the process, this information is captured in Section 3.3 of this document.

3.1.1 National Water Resource Strategy (NWRS)

The Preamble to the National Water Act recognises “*The need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to a regional or catchment level so as to enable everyone to participate*”.

This means that, over a period of time, DWAF will have to progressively delegate as many of its functions as possible to an authority, in this case the CMA. The CMA will be responsible for the sustainable and equitable utilisation of the water resources within its Water Management Area (WMA). As the CMA will be established in an environment where various institutions such as district and local governments, water user associations and NGO’s already exist and/or operate, the CMA will have to recognise and build relationships with these institutions. Such strong relationships will ensure co-operative governance with regard to the integrated management of the water resources in the area and ensure the legitimacy and credibility of the CMA.

3.1.2 Role of the Department of Water Affairs and Forestry

The Department of Water Affairs and Forestry (DWAF), through the National Water Resource Strategy, is the custodian of South Africa’s water resources. It must make sure that water resources are not exploited and that water is shared on an equitable basis, is used efficiently and is managed in such a way that the resource remains sustainable for future use.

DWAF thus has the task to execute water resource management at the national level, while CMAs operate at the catchment (Water Management Area) level. To enable these two levels of management to perform their functions, the National Water Act makes provision for the following:

- ❑ Classification of all river reaches according to the protection level that each river reach requires for the conservation of its ecosystem.
- ❑ Setting aside a “Reserve” (a specific volume of water of acceptable quality), which will always be available for ecological and basic human needs. This Reserve may not be allocated for other uses. The ecological part of the Reserve depends on the class of that particular river reach.
- ❑ Determination of the long-term water quality values that management should aim to achieve in all river reaches, known as the Resource Quality Objectives.
- ❑ Declaration of WMAs that define the boundaries of each CMA’s responsibility.
- ❑ Water resource management institutions at catchment level, such as CMAs (and their Committees) and WUAs.

3.1.3 Roles and Responsibilities of Institutions

There are a number of organisations in the Olifants-Doorn WMA that, in one way or another, are involved in the supply and management of water. Two Acts determine their roles and functions relating to water management, i.e. the National Water Act (Act No. 36 of 1998) and the Water Services Act (Act No. 108 of 1997).

The National Water Act provides the rules and regulations for the management of water resources, while the Water Services Act states how water must be supplied from the resource (managed under the National Water Act) to the consumer. All structures under the National Water Act are therefore known as water management institutions, and all of those structures that fall under the Water Services Act are known as water service institutions.

3.2 Existing Institutional and Functional Arrangements

As noted before, the Olifants-Doorn CMA will be established in an environment where various institutions already exist. For the CMA to obtain legitimacy, the CMA should recognise these institutions and obtain a good understanding of their role and function in the area. Depending on the capacity of these institutions, several of the CMA's functions could be delegated to them – thus fostering and furthering the spirit of co-operative governance.

3.2.1 Regulators

There are a number of organs of State, referred to as Regulators, who have a mandate that relates to, or includes, certain elements of water management. These Regulators can be grouped into four categories and all have a presence in the Olifants-Doorn WMA.

- ❑ **Those which monitor and regulate activities that might impact on water resources**
 - The Department of Water Affairs and Forestry, Western Cape
 - The Olifants-Doorn CMA (when established)
 - Water User Associations, with delegated functions
 - Local Government
- ❑ **Those which monitor and regulate activities that generate waste and may affect water resources:**
 - Department of Water Affairs and Forestry, Western Cape
 - Department of Agriculture, Western Cape
 - Department of Environmental Affairs and Development Planning, Western Cape
 - Western Cape Nature Conservation Board
 - Northern Cape Nature Conservation
 - Local Government
- ❑ **Those which monitor and regulate land use that may affect water resources:**
 - Department of Land Affairs
 - Northern and Western Cape Provincial Administrations
 - Local Government
- ❑ **Those which develop, implement and improve the necessary frameworks that relate to the provision of water services:**
 - The Department of Water Affairs and Forestry, Western Cape
 - Department of Agriculture, Western Cape
 - Department of Provincial and Local Government

The numerous NGOs, CBOs, business and other organisations that operate within the Olifants-Doorn WMA are listed in Section 5 of the WMA 17 Situational Analysis Document. This document is attached as Annexure 3.1.

3.2.2 Water Service Institutions

There are five water service authorities in the Olifants-Doorn WMA that are responsible for supplying potable water. They are the:

- Cederberg Municipality
- Hantam Municipality
- Kamiesberg Municipality
- Matzikama Municipality
- Witzenberg Municipality

Some of the district municipalities also have limited water service authority functions in that they provide potable water to their district municipal areas or act as water service providers. These are:

- Boland District Municipality
- Namakwa District Municipality
- West Coast District Municipality

There are no water boards that provide water to the area. The role of the West Coast District Municipality, which was the largest supplier of municipal water in the Olifants-Doorn WMA before a change in legislation, as a possible water service provider, was still negotiated at the time this Proposal was finalised.

Institutional arrangements under the National Water Act and the Water Services Act are listed in Table 3.1 below.

3.2.3 Water Management Institutions

Water Management Institutions are organs of State with a mandate to monitor and regulate those activities of water users that may affect the quantity, quality, aquatic biota and riparian habitat of the water resources. The Department of Water Affairs and Forestry (DWAF), catchment management agencies and water user associations are all classified as water management institutions.

There are a number of water user associations in the Olifants-Doorn WMA. This is mainly due to the fact that agriculture is the single most important generator of income in the area. As the catchment is geographically situated in a mainly winter rainfall region, the storage of water for distribution during the summer months is vital to the sustainability of this economic source. A number of water user associations (of which LORWUA is the largest) have been established to supply water for its members. In some areas (such as the Sandveld/ Langvlei) plans are afoot to establish water user associations not for the distribution of water, but rather for the control and management of the quantity of groundwater being abstracted.

Table 3.1: Institutional arrangements under the National Water Act and the Water Services Act

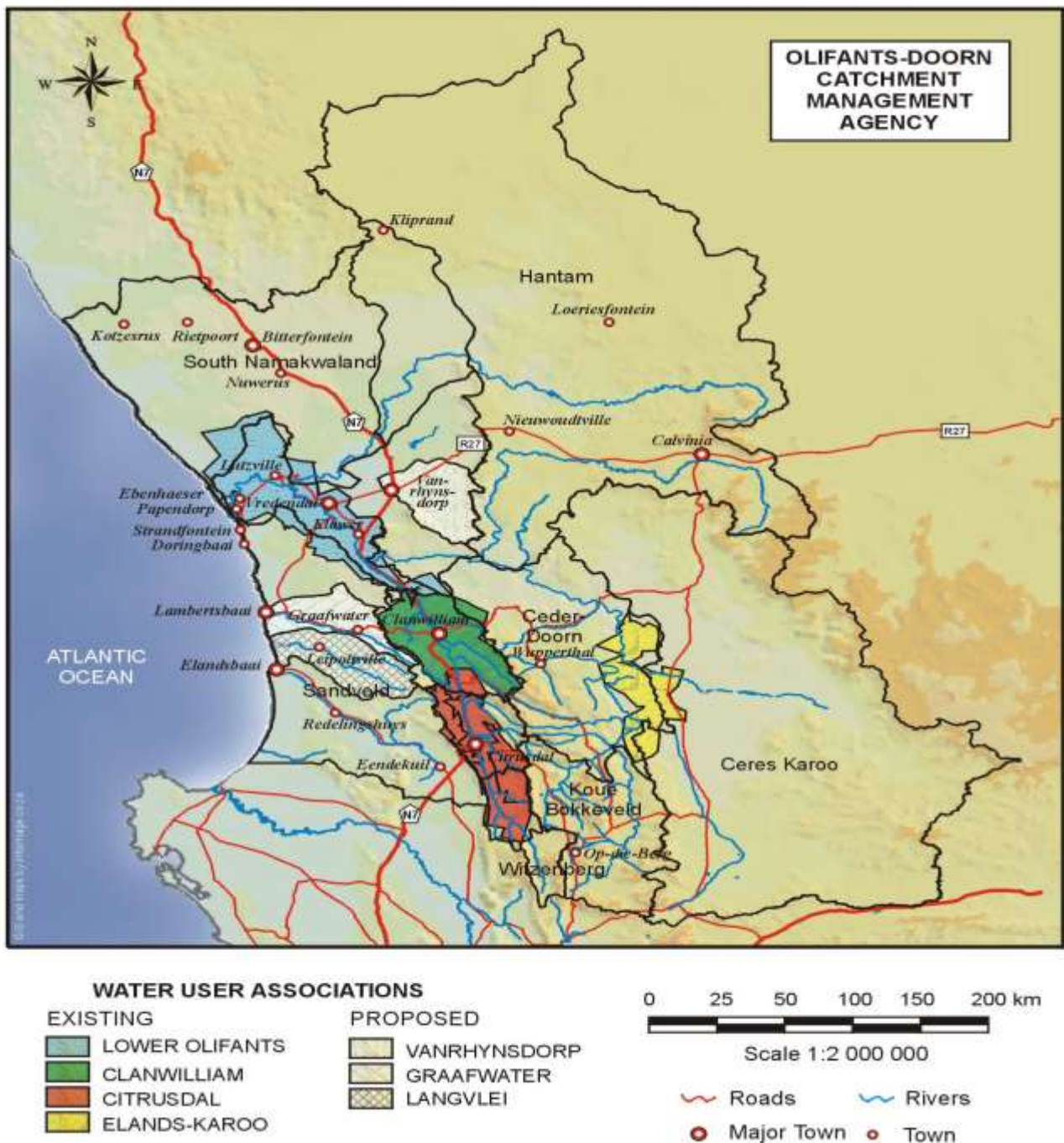
NATIONAL WATER ACT Act No. 36 of 1998	WATER SERVICES ACT Act No. 108 of 1997
The National Water Act legislates the way in which all of South Africa's surface and groundwater resources are protected, used, developed, conserved, managed and controlled.	The Water Services Act legislates the municipal function of supplying water from a water resource (managed and protected under the National Water Act) to the consumer.
Objective: To ensure that there is enough water of good quality available for distribution to municipalities, water boards, water user associations and other water service institutions.	Objective: To provide the framework within which water service institutions have to supply water to their consumers.
WATER MANAGEMENT INSTITUTIONS	WATER SERVICE INSTITUTIONS
Catchment Management Agency (CMA)	Water Services Authority
◆ A CMA's function is to investigate and advise on the protection, use, development, conservation, and management of the water resources in its water management area (WMA). ◆ Some of these functions may be delegated to a WUA. ◆ There are 19 water management areas in South Africa – each will have its own CMA. ◆ CMAs are required to compile a catchment management strategy for their area. This strategy has to take into account the water services development plan of every municipality within its boundary.	◆ Only municipalities are water services authorities for their respective areas of jurisdiction, whether they are category A: Metropolitan; or B: Local ◆ Municipalities are responsible for supplying water (and sanitation services) to their consumers. This is the reason why municipalities have to draw up a water services development plan (WSDP) for each area within its jurisdiction.
Water User Association (WUA)	Water Services Provider
◆ A water user association (WUA) is a group of individual water users who have agreed to belong to one co-operative body that will supply them with water and/or monitor the amount of water abstracted from a resource. ◆ The most important function of a WUA is to provide water from a specific resource to its members, as well as to maintain the infrastructure related to this water supply. ◆ WUAs are usually found in rural areas where they mainly supply water for agricultural purposes.	◆ These institutions physically supply the water to consumers. Municipalities are generally the water services providers. ◆ Municipalities may also contract private or public institutions to distribute the water on their behalf. Because they only assist with the provision of water, they are called water services <i>providers</i> – the authority over the water remains with the municipality to whom they are contracted. ◆ No institution may act as a water services provider without the approval of the water services authority.
Catchment Forums	Water Boards
A catchment forum represents the stakeholders in a specific sub-catchment area. Such stakeholders include communities, NGOs, municipalities, farmer associations, government departments etc. Although catchment forums have no statutory powers, they will be consulted before any decisions on water resource management issues can be made. They are the 'eyes' and the 'ears' of a CMA.	◆ A water board is a water services institution because it obtains its water from one or more national resources (usually dams) from where it distributes the water to multiple water services authorities (municipalities).

At the time of this proposal being presented, there are 3 existing and 3 proposed water user associations in the Olifants-Doorn WMA. These are:

- ❑ **Irrigation boards extended and transformed to WUAs:**
 - Lower Olifants River Water User Association (LORWUA) (already established)
 - Clanwilliam Water User Association (in process)
 - Citrusdal Water User Association (in process)
- ❑ **Proposed new WUAs:**
 - Vanrhynsdorp Water User Association
 - Graafwater Water User Association
 - Langvlei Water User Association
- ❑ **The Elands-Karoo Irrigation Board is being disestablished.**

The areas of jurisdiction of these WUAs are shown in Fig 3.1

Figure 3.1: Areas of Jurisdiction of WUAs in the Olifants-Doorn WMA



3.3 Existing capacity and functions performed by water management institutions in the Olifants-Doorn WMA (WMA 17)

During a number of CMA Reference Group meetings existing institutions indicated that they could perform a number of the functions and management activities within the WMA on behalf of the CMA. The West Coast District Municipality, for example, has a strong presence in the area and already performs a number of functions with regard to rural water supply. The water user associations in the WMA also operate extremely effectively and could continue and/or expand their roles to fulfil a wide range of delegated water management functions.

In addition, there are numerous community-based organisations who have taken a keen interest in water issues and who are willing to perform certain functions on behalf of the CMA.

During the development of this proposal, existing institutions were given the opportunity to inform the CMA Reference Group of the possible functions they could fulfil on behalf of the CMA. These presentations are attached as part of the minutes of the meetings at which the presentations were made.

The importance of participation in the various Integrated Development Plan (IDP) processes was emphasised throughout the process. Decisions are often made by regulators that impact severely on the budgets of the municipalities. Should these decisions not be in line with the budget proposals and requests put forward through the IDP processes, conflict could arise.

3.3.1 Department of Agriculture (Western Cape)

The Western Cape Department of Agriculture is, inter alia, responsible for the following functions with relation to water:

- ☐ Evaluation of existing irrigation systems.
- ☐ Review of irrigation system design prior to implementation.
- ☐ Design of water supply and irrigation systems for resource-poor farmers.
- ☐ Technology transfer.
- ☐ Support of SABI (South African Irrigation Institute) training courses for irrigators.

Management functions that could be made available by the Western Cape Department of Agriculture to the CMA are:

- ☐ Ongoing input regarding the effective use of water.
- ☐ Inputs on effective use of water with respect to the evaluation / application of licences.
- ☐ Provide input with respect to planning of irrigation schemes.
- ☐ Design systems for new farmers.
- ☐ Funding of infrastructure for new farmers – depending on the availability of funds.
- ☐ Training and after-care to projects to ensure sustainability – depending on funding and availability of staff.

3.3.2 West Coast District Municipality

Municipal functions, particularly with regard to water and sewerage, has for many years been divided between B and C municipalities. On 6 January 2003, the Minister of Local Government decided that all B Municipalities shall become the Water Service Authorities responsible for water and sanitation services.

Until this change in legislation, the West Coast District Municipality (WCDM) had always been the largest water services provider in the Olifants-Doorn WMA. With the B Municipalities now taking over the responsibility for the provision of all water and sanitation services, the management functions initially offered by the WCDM to the proposed CMA may no longer be available. However, if an agreement is reached whereby the WCDM will be rendering the services on behalf of the B

Municipalities (i.e. be appointed as a water service provider), the WCDM could still carry out the management functions mentioned below.

In terms of roles and responsibilities, DWAF has the responsibility to see to the protection and storage of raw water on a national level (National Water Act), while the responsibilities of the B municipalities include the purification, treatment and reticulation of water, and sewerage and storm water management (Water Services Act). This emphasised the importance of compiling a comprehensive Water Services Development Plan through the IDP process. In the longer term, the IDP will also strongly influence governmental funding for water management.

Management functions that the WCDM could make available to the CMA, are:

- ☐ Laboratory services: testing of water and sewerage effluent
- ☐ Secretarial services
- ☐ Working for Water (possibly as an implementing agent)
- ☐ Law enforcement
- ☐ Water Awareness Campaigns
- ☐ Will manage urban and industrial water demand on behalf of the CMA
- ☐ Infrastructure planning and implementation (especially outlying rural areas)

3.3.3 Local Authorities

Management functions that could be made available to the CMA by local authorities, are:

- ☐ Needs assessments
- ☐ Access to water
- ☐ Use of municipal land (commonage) for resource-poor farmers
- ☐ Engineering services
- ☐ Water Awareness Campaigns
- ☐ Education
- ☐ Management of water demand (monitoring water use)
- ☐ Administrative support to catchment forums

3.3.4 Water User Associations

There are two types of water user associations. The first type operates a water scheme. Their functions include maintenance of infrastructure, pollution control, control of alien invasive plants etc.

The Lower Olifants River Water User Association (LORWUA) is one such a WUA. The main aim of LORWUA is therefore to utilise its allocation from a specific water resource so that it's clients can obtain the maximum benefit. LORWUA operates on a demand system where 325 m³ per hectare per week is provided. Drinking water is tapped off from the canal by means of a 20 mm and 25 mm pipe. Several towns and a limited number of industries also use water from the canal network.

LORWUA is already trying to ensure water savings due to the high price of water (R1 537.00 /ha per year in 2003), which makes wastage very costly.

The second type of WUA is one associated with the control of water use from a specific resource, such as groundwater use in the area around Vanrhynsdorp. This type of WUA helps to manage the abstraction from the water resource correctly and creates awareness around issues of water.

Management Services that could be made available to the CMA by Water User Associations:

- ☐ Water use registrations and the collection of water use charges.
- ☐ Control of licence conditions and law enforcement.
- ☐ Agricultural water demand management.
- ☐ Infrastructure planning and implementation.
- ☐ Managerial, technical and administrative support.

3.3.5 Catchment Forums

Catchment Forums will be the vehicles through which public participation will be sustained and the concepts and importance of IWRM will be filtered to grassroots level.

Management Services that could be made available to the CMA by Catchment Forums:

- ☐ Needs analyses (eleven forums: wall-to-wall coverage of the WMA).
- ☐ Identification and prioritisation of water issues.
- ☐ Assistance with the development of a catchment management strategy.
- ☐ Water awareness activities, such as Water and Weedbuster Week.
- ☐ Capacity building.
- ☐ Conflict resolution.
- ☐ Monitoring of water use and water quality.
- ☐ Project management.

3.3.6 NGOs, CBOs and ESPs

Social commitment helps to bring about empowerment in rural areas. Close co-operation and ownership by the community is also a prerequisite for the success of all projects, as is accountability and transparency.

Where NGOs (non-government organisations) and CBOs (community-based organisations) run an office in rural areas, these premises could be used to fulfil certain CMA functions, such as pay points for water use charges, enquiries regarding the supply of water, identification of community needs etc. This will also facilitate the process of establishing and/or capacitating ESPs (emerging service providers) in rural areas.

Management Services that could be made available to the CMA by these organisations:

- ☐ Conflict resolution.
- ☐ Local expertise.
- ☐ Specialised expertise (such as agricultural, geological, climatographical or GIS services).
- ☐ Assistance to resource-poor farmers.
- ☐ Water Conservation and Awareness campaigns.
- ☐ Capacity building.
- ☐ Empowerment of disadvantaged communities.
- ☐ Collection of water use charges.



4. PROPOSED FUNCTIONAL EVOLUTION OF THE OLIFANTS-DOORN CMA

The proposed functions and the management activities of the Olifants-Doorn CMA, arranged per functional area, were discussed during a CMA Reference Group meeting. These functions and activities were prioritised according to the needs of the WMA.

4.1 Proposed functional evolution of the Olifants-Doorn CMA

The delegation of functions to a new CMA, as outlined in the National Water Act, is clearly an evolutionary process and should take place in more or less the following sequence:

- ☐ Initial functions.
- ☐ The powers and duties set out in Schedule 3 of the Act.
- ☐ The powers and duties of a "responsible authority".
- ☐ "Other powers and duties".

Discussion Document 2, which was presented at the above-mentioned CMA Reference Group meeting and is attached as Annexure 4.1, gives an explanation of the initial powers and functions expected to be executed by the CMA, as well as the general powers and functions to be delegated or assigned to the CMA over a period of time. The possible management activities associated with the general CMA duties, powers and functions, were discussed per functional area as described in Annexure 4.1: Table 3.1.

The "plausible sequence" for the progressive delegation and assignment of functions in addition to the initial functions, was discussed at great length during this and subsequent CMA Reference Group meetings. The particular functions and the rate at which they should be delegated will depend upon the water resource management priorities for the WMA, which will only be outlined once the catchment management strategy has been developed. The CMA Reference Group did, however, prioritise the functions and management activities, taking into consideration the resources available to the CMA and the capacity and the existing expertise available in the Olifants-Doorn WMA.

The outcome of these discussions, which was done by means of group discussions over two CMA Reference Group meetings, is listed in Table 4.1 below. The various issues related to the functions and the management activities of each functional area were listed, and a time frame was allocated to the implementation of these activities. The CMA Reference Group foresees that the CMA will negotiate the implementation of the functions over a period of 10 years. The period in which the CMA should implement these functions was therefore divided into 3 phases, i.e. year 1 – 2; years 3 – 5; and years 6 – 10.

The following critical issues were highlighted and taken into consideration when decisions were made regarding the time scale in which the CMA should implement the various management functions and activities:

- ☐ The impact the shortage of water will have on the health and quality of life of the people living in the area.
- ☐ The potential in the creation of employment due to better water management.
- ☐ The lack of sufficient and efficient water services (water supply and sanitation).
- ☐ The need for better communication and more educational material.
- ☐ The call for better representivity and more support to resource-poor farmers.
- ☐ The fact that water demand exceeds the water supply.
- ☐ The poor quality of drinking water in certain areas.

During the first two years the focus should be placed on the initial functions of a CMA, which revolve around water resource strategies, institutional co-ordination, co-operative governance, stakeholder communication and administrative activities. The Department of Water Affairs and Forestry (DWAF) will play an important supporting role during these years – especially with regard to financial and technical assistance.

Depending on the progress of the national WARMS, the CMA could also take over the responsibility for invoicing and the recovery of water use charges by means of utilising the central system, as well as the continuous registration of water users and the updating of a water user registry/ database. It is, however, envisaged that full financial control over water use charges will only be delegated to the CMA during years 3 to 5.

The responsibility for monitoring and the administration of information systems, as well as auditing of water resources and the management thereof, will most probably be delegated to the CMA during years 3 – 5. This will require the CMA to have obtained the necessary technical water resource management skills, information technology related capabilities and the organisational and financial skills needed for auditing water management institutions.

It is envisaged that the implementation phase, which focuses on taking responsibility for the physical water resource management activities as outlined in Schedule 3 of the National Water Act, will only commence after year 5. The CMA will also only become a Responsible Authority during years 6 – 10 when the CMA will have obtained the legal-technical competency, supported by the technical, financial, organisational development and administrative achievements of the other phases, to enable it to manage the authorisation (licensing, etc) and control of water use.

The CMA Reference Group was of the opinion that the CMA's initial functions could be fulfilled by a small organisational structure comprising approximately 6 staff members (refer to Table 5.1). More important is the appointment of a Governing Board, who will appoint a CEO and the initial support staff. Their most important task during the first year of the CMA's existence will be to develop the initial catchment management strategy, design the overall organisational structure and develop the human resources and other policies.

Although it is indicated that functions should be delegated during a specific time frame (such as Year 3 – 5), it means that these functions will commence during that period and that they will continue and, in fact, develop further with time. Emphasis will be placed on the initial functions to be performed during the time frame mentioned, as well as on the co-operation with and the co-ordination of functions between the various existing institutional structures in the WMA.

Table 4.1 Possible delegation and assignment of functions in accordance with water issues of the WMA

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
1. Develop Policy & Strategy	Long-term strategic planning for the CMA	❑ The water resources in the WMA should be developed and managed to benefit everyone in the WMA.	X		
	Develop Catchment Management Strategy, including Water Allocation Plans	❑ An inadequate level of service in the supply of water to some communities and farms exists. ❑ Opportunities should be identified and optimised. There is a need to upgrade infrastructure to aid the tourism industry. ❑ Job creation: The relative merits of farming and tourism should be evaluated.	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
	Reconcile water availability and requirements (within the WMA)	☐ The lack of water affects the quality of life of inhabitants and limits development opportunities. Job creation projects fail because of a lack of water. ☐ Limited suitable water is available, thus limiting the development of resource-poor farmers. ☐ The amount of groundwater abstracted is a cause for concern. Groundwater yield must be determined per sub-catchment.		X	
	Financial and business planning for the CMA	☐ Develop business plans.	X		
2. Support Water Management Institutions / Organisations	Create and support consultative bodies such as catchment forums (ensuring participation)	☐ Forums should elect executive committees if immediate decisions need to be taken. ☐ Better communication (report back) to WUAs and Forums.	X		
	Establish Water User Associations	☐ Administrative delays in changing from Irrigation Boards to Water User Associations. ☐ WUAs must assist resource-poor farmers in their application for subsidies and the allocation of water.	X		
	Identify water resource user-related stakeholders	☐ Resource-poor farmers should have better representation on decision-making forums. ☐ Stakeholders must be empowered to ensure their continued participation in the process. The use of developmental officers in the regions (similar to Dept. of Agriculture) is proposed to capacitate and inform stakeholders.	X		
	Co-ordinate the activities and relationships of Water Management Institutions in the WMA	☐ Support interaction through forums and other structures.	X		
	Promote co-operative governance between government institutions	☐ Available land and water resources must be identified. (This would require co-operation between the departments of Land Affairs and of Water Affairs and Forestry). ☐ Liaison between the Western Cape and Northern Cape is necessary for combined development schemes	X		
	Foster co-operative governance and create partnerships with civil society and the private sector	☐ Farmers should be encouraged to join "Kleinboere Verenigings" and vice versa.	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
	Build capacity in Water Management Institutions and catchment forums	☐ The CMA establishment process should be fully inclusive. ☐ Education and awareness building is required. ☐ Decision-making and management processes should be more inclusive. ☐ The needs of resource-poor farmers should be addressed. This includes giving advice on how to organise themselves (capacity building, education). ☐ Capacity building and training programmes are required. These should be continuous. The issues that require most pressing attention are: • Informing people on how they can become involved in structures. • The most appropriate way of using and saving water.	X		
	Support and advise on water resource planning and management activities	☐ Help should be given to developing and existing resource-poor farmers. ☐ Information should be provided to all water users on a continuous basis.	X		
3. Water Use Management	Register water use	☐ Expand registration to all 11 categories of water use.	X		
	Authorise water use (licensing, etc.)	☐ The management and allocation of water should encourage the development of agriculture and industry. ☐ Manage water allocation to resource-poor farmers ☐ Licensing system is needed.		X	
	Assess needs and available resources	☐ The study on raising the wall of the Clanwilliam Dam should take cognisance of the needs in towns from Strandfontein to Elands Bay and Redelinghuys, as well as from Ratelfontein along the railway line to Paleisheuwel and Het Kruis. ☐ Water supply is inadequate, especially to some of the outlying towns, where some experience periods without water (Nieuwoudtville especially). ☐ A resource determination is required, especially in those communities with little or no water. ☐ The region is almost exclusively dependent on groundwater.	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
	Manage Water Quality	☐ Poor drinking water quality. More research and improved discharge standards for local authorities, agriculture and industry is required. ☐ The use and effect of agri-chemicals such as fertilisers, pesticides and herbicides, as well as the burning of tyres and plastics should be monitored and managed. This should be done in alignment with other initiatives in the fruit export and wine industry. ☐ Common standards should be found. ☐ The potential of water pollution in the Olifants and Koekedouw Rivers could pose a threat to public health. The source of this pollution should be identified. ☐ Better communication on the pollution problem is required.		X	
	Set water use charges, send out bills and collect payments	☐ There should be a fair pricing structure in the CMA establishment process. Costs should be allocated to where it is incurred. No cross-subsidisation should be allowed.	X		
	Financial assistance to water users	☐ Subsidies should be made available to small-scale and resource-poor farmers.	X		
	Monitor authorisation requirements	☐ Water abstraction must be monitored and managed where needed.	X		
	Ensure compliance (including enforcement)	☐ Take corrective action against non-compliance.		X	
4. Resource Protection	Reserve determination for catchments, wetlands and estuaries	☐ Provide feedback on ecological studies done during the 1990's. ☐ Ensure compliance with the National Water Act	X		
5. Physical Implementation	Ensure dam safety and dam zoning	☐ Promote dam safety compliance		X	
	Implement water conservation programmes	☐ Capacity building and awareness creation (water education) is needed. ☐ Organic farming should be promoted.	X		
	Implement water demand management interventions	☐ Water demand management is required in all sectors		X	
	Rehabilitate water resources (such as wetlands or riparian zones)	☐ Rehabilitate water resources where required.			X
	Control of invasive alien plants	☐ Trees such as the Prosopis ("muskietboom") and the <u>acacia</u> and <u>eucalyptus</u> species are invading rivers and depleting groundwater resources. ☐ Remove alien vegetation to re-establish wetlands – tourism potential.	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
	Operate and maintain water resource systems	☐ The improved management and development of groundwater is required. ☐ Planning in the use and development of groundwater should take place well in advance of abstraction. ☐ The poor quality of groundwater means that desalination is necessary. This is very expensive (R30-R35 /kl at Nuwerus/Bitterfontein). ☐ In the Rietpoort area only a small quantity of water of poor quality is available. Plans are well in place to provide Rietpoort with desalinated water from the Bitterfontein Scheme.		X	
	Information regarding water resources	☐ Farmers should be informed (twice a year) regarding the amount of water available for irrigation before they start planting.	X		
	Develop water resource schemes	☐ Additional reservoir storage capacity is needed. ☐ Water restrictions are always in place. (It is proposed that storage capacity be increased. If the Clanwilliam Dam wall cannot be raised, then a dam at Keerom, in the upper reaches of the Olifants River, should be considered. This will also supply Ebenhaeser with water). ☐ The water distribution network should be expanded. ☐ The possibility of a pumping station at Bulshoek Dam should be researched. (A reservoir could be built at Sandkraal). This water could then be fed by means of a pipeline through the Klipfontein Pass to Seweputs, where it could connect with the Strandfontein-Elands Bay pipeline (could be initiated as a job creation project). ☐ Feedback is required on the proposed development of the Melkboom Dam as this may impact on the region in terms of: ▪ Its effect on existing use ▪ Water quality ▪ Water quantity			X
	Emergency interventions (Disaster Management)	Assistance is required during dry spells (drought) or when floods cause damage.	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
6. Manage Information	Monitor water resources (collect, source and capture data)	The following must be monitored monthly: ☐ Level of groundwater in boreholes ☐ Water abstracted from boreholes ☐ Crops being irrigated (water use per month) ☐ Rainfall figures ☐ Water quality (surface and groundwater) ☐ Flow measurements (surface water)	X		
	Develop and maintain databases (including quality control)	☐ Data must be managed.	X		
	Provide geographical information (maps)	☐ Uncertainty exists about the boundaries between the Western Cape and Northern Cape provincial and different water management areas. This could easily be rectified through an information pamphlet that clearly outlines the "water boundaries".	X		
	Maintain information management / evaluation systems	☐ Very little information about previous studies and investigations has been disseminated to the public. The findings of these studies should be made available regularly. ☐ Information on existing studies should be improved and communicated more frequently. ☐ Information is needed on water quality, quantity, geological formations and the storage capacity of aquifers. ☐ Information is required on Environmental Impacts (sustainable agricultural practices). ☐ Information must be user-friendlier. ☐ Lack of information (educational material) on efficient use of water in the agricultural sector.	X		
	Communicate with stakeholders and collect anecdotal information	☐ The dissemination of information to all role players should be improved. ☐ There is a lack of educational material regarding water use. ☐ Education programmes regarding water conservation and water use should be initiated.	X		
7. Provide Corporate Services	Perform financial and organisational audits of Water Management Institutions	☐ Appraisal of business plans to be done.		X	
	Perform functional performance audits	☐ Ensure that functions delegated to Water Management Institutions be performance based		X	
	Provide secretarial support to the Governing Board	☐ Proper secretarial support to the Governing Board is required	X		

Functional Area	Functions and Management Activities	ISSUES	Time frame for delegation (years)		
			1-2	3-5	6-10
	Provide administrative support to all functional areas	☐ Efficient administrative support to all the functional areas is required	X		
	Manage human resources	☐ Efficient and representative staff required	X		
	Ensure financial management of the organisation	☐ Cost-effective and sound financial administration required, ensuring financial viability	X		
	Provide legal support to all the functional areas	☐ Professional legal support important	X		

4.2 Proposed delegation of functions to existing water management institutions

It is the intention not to have a large CMA organisation, but rather to make use of the existing institutions in the Olifants-Doorn WMA. These organisations (described in Section 3) maintain good infrastructure, practice sound management principles and have the capacity to fulfil some of the CMA's functions.

The CMA will not be involved in the operation and maintenance of bulk water schemes or distribution systems. It is envisaged that this will be managed by the WUAs, as it is done at present. It is therefore proposed that the WUAs continue with the functions already delegated to them as part of their transformation process. Regular reporting to the CMA will ensure that the delegated functions are executed in accordance with the directives of the CMA.

There are no large integrated schemes or transfer schemes in the WMA.

With regard to hydrological services, the CMA Reference Group was of the opinion that this should remain a centralized function, preferably as part of the proposed national utility. At present (2002/03), DWAF's budget for hydrological services represents approximately R12 million per year. Approximately R850 000 thereof is spent on hydrological services for the Olifants-Doorn WMA. This includes data capture, calibrations and maintenance of measurement stations, but excludes the construction of new measurement stations. All the hydrological services in the Western Cape are at present being provided from Worcester, where 48 people are employed. The number of employees and the specialized equipment required to render this service, makes it too expensive for each CMA to establish it's own hydrological division.



5. PROPOSED ORGANISATIONAL STRUCTURE OF THE OLIFANTS-DOORN CMA

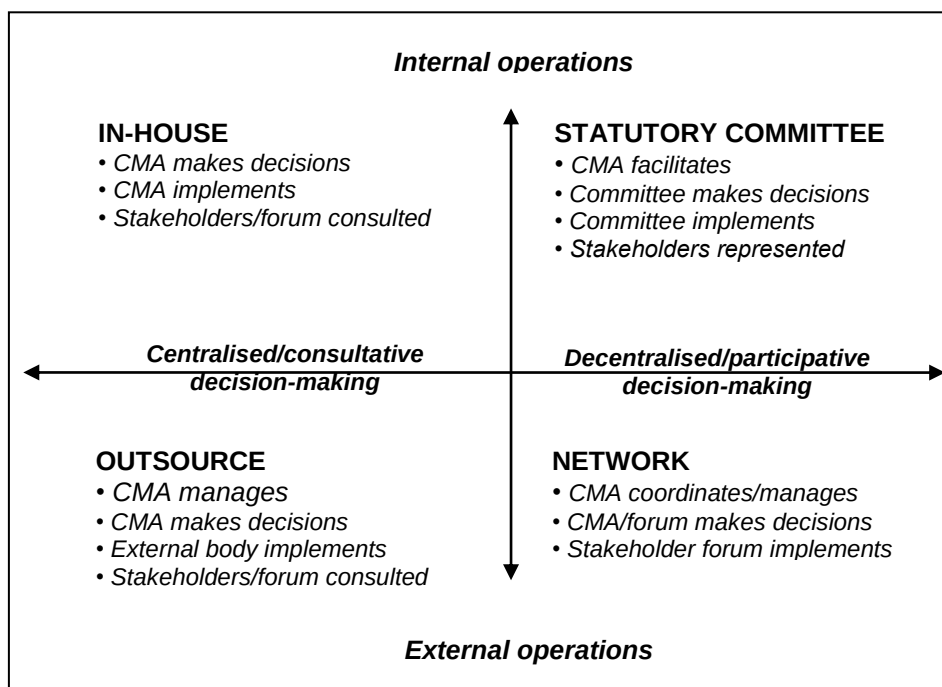
Once the extent of the functions and the time frames for the implementation of the various proposed functions had been determined (refer to Item 4), the CMA Reference Group was able to propose the type of organisational structure that would support the delegated and assigned functions. This recommendation was made at the CMA Reference Group meeting held on 19 September 2002. Discussion Document 3 (attached as Annexure 5.1) was used as the point of departure for the discussion. The CMA Reference Group took cognisance of the fact that the structure of an organisation will determine the processes that co-ordinate and control the tasks of the organisation. For this reason they carefully compared the functions to be implemented by the CMA to the management abilities within the existing water management structures in the Olifants-Doorn WMA, the present DWAF staff complement assigned to the WMA and the managerial, technical and administrative expertise available locally.

Consideration was also given to the fact that the CMA will undergo a considerable amount of change during the first few years of its existence – as it gradually takes on additional functions and responsibilities. This is the reason why the initial structure proposed by the CMA Reference Group makes provision for change and growth. This includes the possible transfer of DWAF staff (with their existing functions), as well as the need to gradually build core CMA units that will function in an integrated manner. However, the CMA Reference Group made it very clear that the transition to a fully functional CMA has to be supported by appropriate capacity and/or skills building programmes to include people from the area.

5.1 Considerations for the organisational structure

The members of the CMA Reference Group discussed four generic approaches to institutional arrangements, as depicted in Figure 5.1 below. It was decided that as many functions as possible should initially be outsourced to emerging service providers, existing NGOs and CBOs, WUAs, the District and Local Municipalities and consultants. This will enable the CMA to consist of a small, but qualified staff complement. The CMA could then rather concentrate on the managerial and administrative functions related to IWRM than the operational side thereof.

Figure 5.1. Institutional approaches to performing of CMA functions



The following considerations were kept in mind during the discussion on the proposed evolution of the CMA organisational structure:

- ❑ The expertise required to implement integrated water resources management (IWRM).
- ❑ The need for a developmental, participatory and co-operative organisation.
- ❑ The importance of efficiency, effectiveness and service delivery.
- ❑ The need for transformation and mentoring.
- ❑ The flexibility required in the structure – must be able to adapt to organisational change and evolution.
- ❑ The principle that the CMA should focus on its core business.
- ❑ The prerequisite for the CMA to be customer service oriented.

During the discussions the CMA Reference Group made it clear that numerous institutional objectives should be maintained. These include the CMA's responsibility to achieve social and economic objectives whilst implementing IWRM. It should address the inequities of the past, such as race, gender, poverty and the lack of access to water. By adhering to these principles, the CMA will be able to achieve the transformation objectives of DWAF and the national government.

5.2 Proposed organisational evolution of the CMA

The functions required of the CMA are outlined in the section above. However, in order for the CMA to:

- (i) Carry out its functions mandated in terms of the Water Act;
- (ii) Be a credible organisation in the eyes of stakeholders and those who will pay for the organisation by means of water use charges; and
- (iii) Be viable, effective and efficient, requires the following:
 - ❑ That the CMA recruits appropriately qualified staff;
 - ❑ That it proactively engages in co-operative governance;
 - ❑ That it actively assesses how it will best make use of the existing institutional strengths in the WMA; and
 - ❑ That it be organisationally and geographically positioned to make the best possible contribution to the protection and development of the water resources under its auspices.

The Olifants-Doorn WMA encompasses a large geographical area, and is therefore regarded as a rural, agriculturally dominated WMA with relatively low levels of industrial, forestry and domestic water use. Apart from the IWRM functions, the Olifants-Doorn CMA will focus on the use of water for agricultural purposes and the development of water use entitlements, especially with regard to resource-poor farmers and subsistence farming.

A vast amount of expertise is vested in the West Coast District Municipality (WCDM), the local authorities and a number of transformed and new water user associations (WUAs). In addition, the Olifants-Doorn CMA will have to continue with the investment already made in stakeholder participation and institutional development. By developing and capacitating core units in water use, water resource management and information management functions, these units can significantly assist in addressing most of the important IWRM challenges.

The CMA should foster partnerships with the capable organisations in its WMA, such as WUAs, district and local government and sectoral representative bodies. The CMA will also have to rely on well-functioning catchment forums to facilitate stakeholder participation and to implement certain water resource management activities. It is for this reason that the CMA Reference Group reached consensus on the point that one (1) catchment management committee should be established during the initial phase of the CMA's establishment. The development thereof into two or more committees will be determined according to the needs of the WMA. By choosing this route, the CMA will be able to follow the preferred more decentralised network or committee approach, supported by extensive outsourcing of operational functions.

In essence, the CMA Reference Group therefore agrees with the generic institutional-organisational structure illustrated in Figure 5.2 below.

five (5) staff members were assigned to the Olifants-Doorn WMA. No specific recommendation was made about how many of the staff from DWAF could be transferred to the CMA or when this should take place. For example, should staff be transferred only once almost of the functions have been taken over by the CMA or should some personnel be transferred initially. The Governing Board will pursue this option once the CMA is established. In the process of appointing staff, the Governing Board should take cognisance of the Reference Group's request that persons from the area be appointed, rather than all staff being seconded from the DWAF regional office in Bellville.

Although it may be construed that six staff members will not be able to execute all the functions, this number is only regarded as the minimum number of staff required during the initial stage of the CMA being established. The number could be increased once the Governing Board has assessed the situation and feels that more staff should be appointed to fulfil its functions. Cognisance should be taken of the fact that the number of staff should coincide with the functional evolution of the CMA, as well as reflect the capacity built within the organisation. Because of the large number of functions which could be outsourced to existing organisational structures in the area, it is estimated that 15 staff members will be able to effectively manage the CMA at full functionality.

The organisational structure would evolve to serve a fully functional and "responsible authority" over a period of approximately 10 years, depending on the functions delegated, the role of other institutions in the WMA and capacity building.

5.3 Liaison between DWAF and the CMA

It is envisaged that the Governing Board, as well as the CEO of the CMA, would primarily play an advocacy role in setting the vision for the organisation and in terms of ensuring stakeholder buy in. Senior management should carry out the executive functions, while most of the operational functions should be outsourced to existing water management institutions in the WMA, or alternatively to specialized consultancy firms. The CEO, as chief executive of the CMA, would report to the Governing Board.

Line management functionaries would assist the CEO in carrying out the mandate of the CMA. A number of these functionaries may be seconded and/or transferred from DWAF.

At present DWAF has a satellite office in Clanwilliam, staffed by one technical manager and one administrative assistant. This office can be capacitated to assist the CMA during its initial phase of establishment.

5.4 Liaison between the CMA and Stakeholders

The eleven catchment forums established in the WMA will play a vital role in ensuring continued communication between the CMA and its stakeholders. These forums do, however, need administrative support to ensure their sustainability. For this reason an administrative assistant was appointed in the Clanwilliam office during February 2003.

Once the CMA has been established, a Catchment Management Committee should be established as a matter of urgency. The existing CMA Reference Group, which is representative of all stakeholders and every catchment forum, could fulfil this function. This will further ensure the continued involvement of stakeholders, thus promoting co-operative governance and the participatory approach in all matters pertaining to water resource management. It will also assist the CMA in confirming its legitimacy and help to identify water resource management priorities.

5.5 Possible risks to the viability of the proposed organisation

The sustainability of the Catchment Forums is of the utmost importance to ensure that issues are addressed at "grassroots" level and that these issues and recommendations are forwarded to the CMA. A sustainability drive that includes the capacity building of forums has been discussed in detail in Section 1 and 7.

Another risk may arise when insufficient water charges are collected from water users. Sufficient transfer of information should take place to motivate water users and to promote a “willingness to pay”. It is therefore of utmost importance that continuous communication regarding water use charges takes place.

The Olifants-Doorn CMA’s biggest challenge will be to ensure and maintain co-operative governance between itself and the numerous institutions that, in one way or another, are involved in water matters in its WMA.



6. FINANCIAL VIABILITY OF THE OLIFANTS-DOORN CMA

During the meeting of the CMA Reference Group held on 6 November 2002, the members were given the chance to comment on the cost implications and financial viability of the CMA, given the volume of water available in the area and the amount of funding that would be obtained by means of water use charges. Discussion Document 4, attached as Annexure 6.1, provided the background for the discussion and outlined the implications of the national *Pricing Strategy for Raw Water Charges*. These water use charges, which will be used for water resources management, represent the main source of funding for CMA operations.

6.1 Proposed sources of funding

Section 5 of the National Water Act and the *Pricing Strategy for Raw Water Charges* provides the financial framework within which each CMA will operate. The National Water Act empowers the Minister, in consultation with the Minister of Finance and after consultation with the public, to establish a pricing strategy for any water use. These water use charges will be used to:

- ☐ Fund water resource management;
- ☐ Fund water resource development and the operation thereof; and
- ☐ Achieve equitable and efficient allocation of water.

It is the intention that the Olifants-Doorn CMA will not own, operate or construct water resource infrastructure schemes, but rather concentrate on the management of the water resources and on control of water usage that has an impact on the water resources.

Apart from the income generated from water use charges, the CMA will also obtain (and will be largely dependent on obtaining) seed funding from DWAF during the establishment phase of the CMA. In order for the CMA to make a healthy and vigorous start it is proposed that the seed funding should cover not only initial operational cost, but also some initial capital costs.

There are several sources of continuous funding applicable in this WMA. These are charges for taking water, the storage of water, afforestation charges and waste discharge charges. At present these charges are all payable to DWAF. The responsibility for setting charges, billing and collection (by means of the centralised control system) could be delegated to the CMA quite soon after its establishment, depending on the capacity within the CMA.

The present billing and collection system is based on the national Water Use Authorisation and Registration Management System (WARMS), which contains all the necessary water use information according to the category of use. As the CMA for the Olifants-Doorn WMA has not yet been established, the existing water charges (as billed from April 2002) are payable to DWAF.

Cognisance must be taken of the fact that charges for waste discharge are not reflected in the CMA budget. Until the Waste Discharge Charge System (WDCS) is in place, DWAF will perform those functions relevant to waste discharge control without any charge to the CMA.

The charges being billed by DWAF for water resource management within the Olifants-Doorn WMA for 2002/2003 and 2003/2004 are illustrated in Table 6.1 below.

Table 6.1: Water Use Charges in the Olifants-Doorn WMA

Water use	2002/2003	2003/2004
Domestic/ Industrial:	1,67 cents/m ³ (1m ³ = 1 kl)	1,77 cents/m ³
Agricultural:	0,54 cents/m ³	0,65 cents/m ³
Forestry:	0,41 cents/m ³	0,51 cents/m ³
Waste discharge:	Not yet determined	Not yet determined

The above charges are based on the total volume of water allocable in the WMA – namely 335 million m³. The total direct cost for a fully functional CMA (in real value terms) has been calculated as being R3,6 million and the contribution to Working for Water as being R5 million. (The reason for the high Working for Water contribution is explained in more detail under section 6.2.)

Table 6.2 indicates the expected support by DWAF to the CMA for establishment and commissioning activities as calculated according to the existing generic guidelines.

Table 6.2. Possible DWAF Financial Support for CMA Establishment, as well as Post-Establishment Commissioning (R000)

Financial Year	2004/05	2005/06	2006/07
DWAF establishment support to the CMA	R 2 000	R 1 000	R 500
Extending participation	R 1 000	R 500	R 200
Governing Board	R 400	R 100	-
Set-up activities	R 600	R 400	R 300
DWAF commissioning support to the CMA	R 1 000	R 2 000	
CMS development	R 1 000	R 2 000	
DWAF operating support to CMA	R 1 000		
Total establishment support to the CMA	R 4 000	R 3 000	R 500
DWAF expenditure on WRM commissioning	R 3 000	R 1 000	
WRM studies in support of the CMS	R 2 000	R 1 000	
Information system development	R 500	-	
WARMS, water use charging and verification	R 500	-	
TOTAL SUPPORT TO CMA	R 7 000	R 4 000	R 500

6.2 Cost of the national Working for Water programme

The CMA Reference Group was deeply concerned about the fact that the Working for Water projects in the Western Cape are mainly funded from DWAF's Trading Account, as opposed to the rest of South Africa where the bulk of these costs are funded from Poverty Relief Funding. At present the Working for Water contribution required by the future Olifants-Doorn CMA, i.e. R4,2 million, is more than the total current cost for water resource management in the area (R1,414 million) or the estimated establishment costs of the CMA (R4 million – refer to Table 6.2).

The effect this has on the water charge is as follows:

WRM cost	0,41 cent
WfW cost	1,26 cent
TOTAL	1,67 cent

As can be seen from Table 6.2, the cost of the WfW programme is recovered in full from the charges charged to the domestic and industrial sectors. Only 10% of these costs are recovered from agricultural users. They pay the WRM cost of 0,41 cent and 10% of the 1,26 cent WfW cost (= 0,13 cent), bringing agricultural charge to 0,54 cent.

The subsequent 1,13 cent shortfall in revenue from the agricultural sector is subsidised by DWAF. In the case of the Olifants-Doorn this results in a subsidy of approximately 85% of the cost of the Working for Water projects in the area. The CMA should ensure that DWAF continues with this contribution in order for the function of eradicating invasive alien vegetation to continue.

The above concerns were expressed by members of the CMA Reference Group at the public meeting during which the National Water Resources Strategy was introduced to the public in the Olifants-Doorn WMA. The minutes of this meeting are attached as Annexure 6.2. An appeal was made that the disparity in the Working for Water funding be addressed by DWAF as a matter of urgency. The National Water Act clearly states that the principles “equity” and “equality” must be pursued. It is perceived that these principles are at present not being applied to the funding of the Working for Water programme in the Western Cape.

This request was once again reiterated during the presentation on the re-prioritisation of the Working for Water projects made by DWAF at the CMA Reference Group meeting held on 20 February 2003 (presentation attached as part of Annexure 1.2.).

6.3 Cost of water resource management

The cost (or proposed expenditure) of a CMA consists of the following:

- ❑ **Capital and operating costs:**
Capital costs represent occasional expenditure by the CMA on buildings, equipment and machinery, while operating costs are the ongoing expenses necessary to support the functioning of the CMA.
- ❑ **Establishment and ongoing costs:**
There may be once-off costs associated with the establishment of the CMA, while the recurring capital and operating costs associated with performing its functions are ongoing.
- ❑ **Fixed and variable costs:**
Fixed costs are those costs that are constant every year, irrespective of the amount of water used, while variable costs relate to the quantity of water used. By their nature, the CMA costs have a negligible variable component, although costs generally increase during periods of drought.

The above-mentioned costs can be broken down into the following categories:

Staff (personnel) costs:	Representing the total cost of employing CMA personnel
Outsourcing:	To other organisations or contracting-in services
Overheads:	Incurred by the CMA
Capital:	Expenditure or repayments of loans, etc

Staff costs will most probably represent the greatest portion of the CMA's operating costs. The estimates provided in Table 6.3 (which include salary, pension and medical aid) are derived from the *Guidelines for Financing CMAs in South Africa*, which in turn were based on *The South African Staff Survey*. The Olifants-Doorn CMA Reference Group decided that the median salary structure for generic staff levels should be used for budgeting purposes.

Table 6.3. Range for Annual Remuneration of Different Generic Staff Levels

Staff	Lower quartile	Median	Upper quartile
CEO	R 320 000	R 375 000	R 430 000
Manager	R 220 000	R 275 000	R 330 000
Senior	R 150 000	R 190 000	R 230 000
Junior	R 90 000	R 115 000	R 140 000
Administration	R 45 000	R 55 000	R 65 000

The total staff costs for the Olifants-Doorn CMA, based on the proposal by the CMA Reference Group that only 6 people are to be employed during the initial phase and that this should increase to 15 staff members by year 10, will be as follows:

Table 6.4: Total Staff Costs for the Olifants-Doorn CMA

Cost centre	TOTAL (Initial phase)	Cost centre	TOTAL (Fully functional)
1 x CEO	R 375 000	1 x CEO	R 375 000
2 x Manager	R 550 000	2 x Manager	R 550 000
0 x Senior	-	3 x Senior	R 570 000
1 x Junior	R 115 000	4 x Junior	R 460 000
2 x Administration	R 110 000	5 x Administration	R 275 000
	R 1 150 000		R 2 230 000

The exact number of personnel required, as well as their total remuneration packages, will have to be decided by the CMA Governing Board once more detailed investigations and studies have been done and job descriptions, performance agreements, etc. have been drawn up. It will also depend on the extent of the delegated functions and the CMA's ability to manage and liaise with other institutions and implementing agents. However, six staff members should be able to manage the initial functions delegated to the CMA in terms of sections 19 and 20 of the National Water Act as there are currently six DWAF staff members who are dedicated to the Olifants-Doorn WMA and who are performing the required functions.

For the purpose of the Proposal, a straight-line increase in staff and budget over the period to full functionality has been assumed. The actual number of staff, as well as the actual increase in budget, will be determined by the functions the CMA will perform, the time-frame when these will be delegated and the organisational evolution. The possibility of sharing expertise with the neighbouring Berg and Breede-Overberg CMAs, will also influence the number of staff required.

The total estimated water resource management cost (excluding the costs of hydrological services) and the relevant charges for Year 10 (i.e. when the CMA should be fully functional) is described in Table 6.5. Present-day values are used for comparative purposes.

Table 6.5: Cost of Water Resource Management Activities in the Olifants-Doorn – Fully Functional CMA at Year 10 (excluding hydrology costs)

WRM activity	Budget R $\times 10^3$	Domestic/ Industrial c/m ³	Agriculture c/m ³
Planning & Strategy	600	0,18	0,18
Water use management	900	0,27	0,27
Resource Protection	600	0,18	0,18
Institutional support	500	0,15	0,15
Information management	500	0,15	0,15
Corporate Services	500	0,15	0,15
Total cost excl WfW	3 600*	1,08	1,08
WfW	5 000	1,50	0,15**
Total Costs	8 600	2,58	1,23

* The R3 600 000 consists of R2 230 000 staff costs (refer to Table 6.4) plus assumed administrative and outsourcing costs.

** Only 10% of the WfW cost is charged to the agricultural sector. The remaining 90% is subsidised by DWAF

A crucial area of activity at the outset, is the development of a catchment management strategy. This should be regarded as a process rather than a once-off event and should be the first task of the Governing Board and the CEO, once the latter has been appointed. Limited support staff will initially be available to assist with this process. Seconded personnel from DWAF can be utilised for this purpose. Provision has been made for support by service providers to facilitate this process. Extensive use will be made of existing DWAF studies, such as the various situation assessments and the Internal Strategic Perspective (ISP) currently being developed by DWAF.

The CMA will also require the necessary information systems to be able to operate effectively. These include basic management support systems such as Internet access, e-mail, billing, debtors, asset management, databases, etc. The set-up cost of an information network is expected to be in the region of R500 000. Due to the great diversity of information, which is relevant to a CMA's operation, and the geographic nature of its distribution, the CMA will require a sophisticated GIS (Geographical Information System). The initial development and implementation of such a system will have to be provided by DWAF if the CMA is to start playing a meaningful role in its area of jurisdiction.

Another basic source of information required for successful IWRM by the CMA, is the reserve determinations for the key rivers, and especially for the groundwater component.

6.4 Financial impact of the proposed water use charges

According to the National Water Resources Strategy, the allocable yield in the Olifants-Doorn (based on a 98% assurance of supply) equals 335 million m³/year. This is made up of 266 million m³ from surface water, 45 million m³ from groundwater and 24 million m³ from agricultural and urban usable return flows. The water use charges set out in Table 6.5 are based on the assumption that this quantity will not increase or decrease.

The situation may change as the water requirements in the area for the year 2000 (i.e. 373 million m³) already exceeded the total allocable yield by 38 million m³. This deficit does not mean that the actual use exceeds the yield, but rather that the need for the Ecological Reserve (estimated at 156 million m³ per year) is not being met at present. Should the reserve determination indicate that it requires the estimated 156 million m³ (or more) per year, the volume of water available to base charges on could decrease.

The possibility exists that additional groundwater will be available to the WMA from the Table Mountain Groundwater (TMG) resource. This resource is being investigated at the moment. From Table 6.6 it becomes clear that the charges proposed for the Olifants-Doorn WMA are indeed viable.

Table 6.6: Increase in Water Use Charges from CMA Establishment to Fully Functional

CHARGES	YEAR 2003/4	YEAR 2012
Domestic / Industrial	1,77 cent/m ³	2,58 cent/m ³
Agricultural	0,65 cent/m ³	1,23 cent/m ³

The greatest concern regarding water charges is that it will become too expensive for the agricultural community – the backbone of the economy in this WMA. However, the 1,23 cents per m³ water per year (at present value) proposed for a fully functional Olifants-Doorn CMA amounts to approximately R100 per hectare irrigated per year – this represents a very small percentage of the input cost for irrigation farming, and is generally acceptable.

At the moment resource-poor farmers who obtain their water from Government Water Schemes, are being subsidised to the extent that the total charge will be phased in over a period of five (5) years. The problem is that this subsidy is not available to resource-poor farmers who are not part of such schemes. Input to this regard has been given to the NWRS process and the request was made that the subsidy should be extended to include every resource-poor farmer in the Olifants-Doorn WMA. A further request was made to phase in the full cost over a period of ten (10) years.



7. VIABILITY OF THE OLIFANTS-DOORN CMA

This Proposal is based on the consensus reached in a series of meetings held by the Olifants-Doorn CMA Reference Group, as described in detail in Section 1. The first complete draft of the Proposal was discussed at a meeting of the CMA Reference Group held on 20 February 2003. The second draft of the Proposal was approved (with amendments) by the CMA Reference Group during a meeting held on 8 May 2003. During this meeting the contents of the final submission to the DWAF Directorate: Catchment Management to initiate the ministerial approval process was agreed upon.

The second draft of the Proposal was also discussed at each of the 11 Catchment Forums – thus ensuring that the information contained in the Proposal had been made available to all stakeholders in the Olifants-Doorn WMA.

The Olifants-Doorn WMA has been fortunate to receive a substantial amount of donor funding from Danida for IWRM projects during the period when this *Proposal for the Establishment of the Olifants-Doorn CMA* was drawn up. Time and money was therefore available to engage stakeholders in the development of the CMA proposal, as well as simultaneously building their capacity towards addressing IWRM issues.

One of the important steps taken by the IWRM project, was the appointment of a service provider for a period of six months to provide support to the DWAF: Western Cape branch office in Clanwilliam. The service provider's brief was to assist the office with the implementation and co-ordination of the IWRM project activities in the Olifants-Doorn WMA. This appointment came into effect in January 2003.

The service provider's initial priority was to appoint and train an administrative assistant for the Clanwilliam office. In addition to acting as administrator for the IWRM projects, this person would also provide administrative support and guidance to the secretaries of the Catchment Forums. This appointment came into effect in February 2003.

These appointments are indicative of the type of personnel required by the CMA and could assist in paving the way for the establishment of the Olifants-Doorn CMA.

7.1 Social Viability

Social viability relates to the CMA's ability to engage a wide range of stakeholders with diverse backgrounds and interests. The CMA will also be required to facilitate institutional development, as well as capacity building and empowerment, to uplift the communities within the WMA.

The structure of the CMA should therefore make provision for a division that will address the socio-economic issues in the WMA. Communication with stakeholders, a vital prerequisite for continued stakeholder support, should form an integral part of this division. This division should enjoy equal status with such divisions as Financial Services and Human Resources. The request by the CMA Reference Group that a developmental officer should be appointed as one of the first staff members, is a sure sign that the CMA will most probably be able to fulfil its social obligations.

Stakeholders need a firm commitment from the CMA that the catchment forums will be utilised as a tool to communicate with stakeholders and to secure their involvement in decision-making processes. Catchment forums should be supported for at least 3 to 5 years to redress the backlog in capacity, appropriate knowledge and skills transfer.

The CMA should take responsibility for public participation from its inception, using local public participation expertise. Strong emphasis must be placed on the importance of these activities. Public participation should not be seen as the first function within the CMA to be scaled down should a CMA need to cut costs – as has often been the type of management decision taken in South Africa in the past. Effective public participation goes to the heart of the model of IWRM as supported by the National Water Act. The Act states clearly that the needs and aspirations of water user and interest groups, articulated in an informed manner and in a receptive environment, should be the life-blood of the work of the future CMA.

7.1.1 Stakeholder engagement and acceptance

The active participation of stakeholders during every meeting of the CMA Reference Group and the Catchment Forums, is a clear indication that the establishment of the Olifants-Doorn CMA is fully supported and endorsed by all stakeholders in the Olifants-Doorn WMA. During the meeting held on 8 May 2003, the members of CMA Reference Group pledged their support by signing the Declaration of Support attached as Annexure 7.1.

It is, however, of paramount importance that the momentum of stakeholder participation must be maintained while this Proposal is being scrutinised for approval. The capacity building programmes mentioned in Section 1 played a vital supportive role during the process of developing this Proposal, but such involvement should be continued in one way or another until the day that the CMA can take over the responsibility for stakeholder participation. The general feeling is that DWAF should take responsibility for continued stakeholder participation until the CMA has been established. This will show the Department's commitment, as well as its (catchment management) agency's proposed commitment to engage in stakeholder participation.

One of the greatest challenges in maintaining stakeholder participation is to engage stakeholders in a number of projects that will allow them to find a rationale and momentum of their own. The ultimate goal would be to motivate these forums to take an active interest in all water resource management issues in their area and to feed into the planning and on-going management activities of the future CMA. One of the ways in which could be done is to start with the process of developing a catchment management strategy for the Olifants-Doorn WMA. Each of the eleven forums could then be motivated to draw up a *"Present State of the Catchment Report"* for their sub-catchment. This involvement could further develop participants' experience and understanding of water resource management issues – an extremely important aspect of maintaining community involvement in water matters. Without a goal and without forum meetings serving the purpose of capacity building, the danger exists that forums may disintegrate.

A factor that should be taken into consideration is the fact that the Olifants-Doorn WMA encompasses a vast geographical area where people are required to travel up to 400 kilometres to attend a meeting. Marginalized communities do not have the financial ability to participate in forums and/or meetings unless they are compensated for the distance travelled. In addition, a large number of HDIs are contract workers who forfeit a day's wages when they attend a meeting. Continued participation from these communities, who need to be capacitated and be part of the institutional and organisational evolution of the CMA, will only be possible if these factors are taken into account and addressed. However, effective management is required to ensure that this type of compensation is not abused.

7.1.2 Representivity

Concerted efforts were made to obtain equitable racial and gender representation on the catchment forums and the CMA Reference Group in the Olifants-Doorn WMA. Annexures 1.3 and 1.11, which give a breakdown of race and gender representation on these two groups, give a clear indication of the success achieved – especially with regard to engaging historically disadvantaged individuals.

Gender representation was partially addressed by appointing women to provide the secretarial services to 10 of the 11 catchment forums. The challenge will be to maintain this precedent – by DWAF in the interim and by the CMA once the latter has been established. The possibility exists that WUAs or local authorities in the area could contribute towards these costs (as is already the case in a few instances).

Much more should be done to capacitate women within communities about water resource management. The Forum Champion's programme partially addressed this issue, but continued funds should be made available for these champions to further capacitate the members of their communities, women in particular.

7.1.3. Poverty Alleviation

The access to water (and land) for the development of resource-poor farmers should be a priority of the CMA. The active participation by existing and potential resource-poor farmers in the CMA process is indicative of their eagerness to actively participate in the socio-economic development of the Olifants-Doorn WMA. The catchment forums will be the ideal vehicles for such development, and the relevant government departments should be encouraged to make use of forum meetings to discuss and solve the many socio-economic frustrations in the area.

The CMA Reference Group played an important role in bringing together various government departments and institutions to discuss ways and means of how to reduce poverty in the Olifants-Doorn WMA. The active involvement of members from the SPP (Surplus People Project) has also placed various issues on the table. These have all been recorded in this Proposal, as well as in the documents accompanying the minutes of each Reference Group meeting.

Members of the CMA Reference Group also assisted various PDIs in obtaining resources to improve their capacity and which enabled them to become more economically active. An example is the donation of computer equipment to a Resource-poor Farmer Association in the Witzenberg valley. The CMA should follow such examples, as this will show its commitment to social upliftment without it actually being cost factor to the CMA itself.

7.1.4 Access to water supply

Most of the rural areas in the Olifants-Doorn WMA have access to a supply of potable water – mainly because of the West Coast District Municipality's success in supplying water to its outlying areas. One area that did have a problem, i.e. Molsvlei and Rietpoort, brought their plight to the attention of the CMA Reference Group at one of the first meetings. The result was that the process of approving the project to provide these communities with a better assurance of supply was fast-tracked.

Such commitment from government departments participating in the CMA Reference Group has most certainly laid the foundation for the co-operative governance the CMA should strive to achieve.

The fears of the resource-poor farming community that sufficient water will not be available once the land reform process is implemented, should be addressed. The CMA should therefore ensure that:

- ❑ Water resources are managed to benefit the historically marginalized communities and resource-poor farmers to help relieve poverty. The poverty and socio-economic indices in the area should be taken into consideration when decisions are made.
- ❑ A quantity of water is set aside for use by the resource-poor farming sector when water allocations are made
- ❑ The catchment management strategy includes the needs of resource-poor farmers.

Another request was made that the CMA's procurement policy provides opportunities to companies and NGOs that practise black economic empowerment in the WMA.

7.2 Institutional viability

Institutional viability relates to the way in which the CMA engages with the various private and government institutions operational within in the Olifants-Doorn WMA, as well as the level of involvement by representatives from these institutions in the activities of the CMA.

IWRM is about the on-going work of maintaining a balance between social, economic and environmental processes. It therefore requires water management institutions to focus on the effective management of the resource for which they have taken responsibility (to varying degrees), while interacting with all other groups and spheres of government whose activities affect and are affected by the manner in which water resources are managed.

A number of organisations and institutions (including all three spheres of government) are already actively engaged in aspects of water management in the Olifants-Doorn WMA. Details of these

organisations can be found in the *Olifants-Doorn Water Management Area* document, prepared for phase one of the IWRM pilot project and which is attached as Annexure 3.1.

7.2.1 Institutional arrangements

❑ Local government

The new local government dispensation potentially allows for the more rational management of water services. The uncertainty about the division of local government functions has been resolved and the supply of water will become the sole responsibility of B municipalities.

Both the B and the C municipalities operating in the Olifants-Doorn WMA have been actively involved in the process to establish this proposal – a sure sign that they fully endorse the CMA's function to manage the water resources from which they obtain their water supplies.

The Integrated Development Planning (IDP) processes of the district and local municipalities are creating a growing synergy between the activities of local, district and provincial government with regard to all planning activities in the Olifants-Doorn WMA. These activities are guided by a number of Western Cape Provincial planning initiatives, which include the *Western Cape Bio-Regional Planning Study*, the *Provincial Spatial Development Framework*, the *Draft Policy for the Settlement of Farm Workers* and the *Draft Policy for the Establishment of Agricultural Holdings on the Urban Fringe*.

❑ West Coast District Municipality

Before the change in legislation on 1 June 2003, the West Coast District Municipality (WCDM) was the major provider of water in the WMA. In this capacity it indicated that it could offer the services mentioned below. Should the respective B municipalities appoint the WCDM as their water services provider, these services will most probably still be available.

- Laboratory services for the testing of water and sewage effluent;
- Secretarial services;
- Management of Working for Water projects;
- Compliance monitoring;
- Water awareness campaigns; and
- Infrastructure planning and implementation.

The WCDM has also offered to promote and manage urban and industrial water demand on behalf of the CMA. In addition the WCDM could be contracted to provide

- Project management,
- Water purification,
- Water distribution (bulk and retail),
- Revenue collection (accounts),
- Network management and optimisation,
- Water network management services,
- Financial services,
- Human resource services,
- Liaison services and public relations,
- Water related consulting services and
- Telemetric services.

The only disadvantage is the fact that the head office of the WCDM is situated in Moorreesburg, which falls within the Berg WMA. Having said that, the District Municipality still provides water services to its District Management Area, which stretches even further north than the Olifants-Doorn WMA.

❑ Water User Associations

The agricultural sector consists of a number of irrigation boards, which have been or are in the process of being transformed into Water User Associations. At present DWAF: Western Cape is supporting the formation of multi-sectoral WUAs that do not focus on irrigation needs alone. In the case of the three established Water Users Associations, namely LORWUA, Clanwilliam and Citrusdal, their areas of jurisdiction were, for example, extended during the transformation

process. The three newly proposed WUAs are at varying levels of development while one irrigation board (Elands-Karoo) will be disestablished. There is also an informal (private) water management action committee, i.e. at Houdenbeks River, which was negotiated by means of the Koue Bokkeveld catchment forum and may later be established as a WUA.

The larger WUAs play an important role in building capacity that could be of great use in water resource management in the Olifants-Doorn WMA and could develop into useful water resource management partners of the future CMA. Most of the WUAs already provide administrative support to the catchment forums in their area.

There are also about 20 resource-poor farmers and agricultural organisations that could all play a supportive role in the execution of certain CMA functions.

❑ **Western Cape Nature Conservation Board (WCNCB)**

The WCNCB is the responsible authority for the conservation of the natural environment of the Western Cape. The goals of the WCNCB are to maintain ecological systems and processes, conserve genetic diversity and manage the potential impact of development on the environment and can contribute a wealth of assistance with environmental issues.

One of the WCNCB's largest projects in the Olifants-Doorn WMA at the moment is the establishment of the Cederberg Mega-Reserve. This came about after scientific studies performed for the C.A.P.E. (Cape Action for People and the Environment) programme found that the existing formal conservation areas were too small, that normal natural processes are needed to ensure the preservation of biodiversity and that certain species will become extinct if no precautions are taken.

The aim of the Cederberg Mega-Reserve is to manage the land in a sustainable manner and to ensure the survival of the ecological processes and systems, with the emphasis on biodiversity, endemism and water. By means of the establishment of partnerships that will contribute directly towards the socio-economic development of the local communities, a broad spectrum of environmentally based recreational opportunities will be made available at the same time.

To achieve this goal, partnerships with landowners are needed. Fortunately a number of conservancies already exist in the area, i.e. Cederberg, Swartruggens, Pakhuis, Wupperthal and Sneeuwberg. Conservancies have been proposed for the Gifberg, Rondegat, Kobbie, Tankwa and Lamberts' Bay areas.

❑ **Department of Agriculture**

The Western Cape's Department of Agriculture is very active in the Olifants-Doorn WMA. The expertise on agricultural water demand management provided by this provincial department will be of great help with the CMA's responsibility to manage the water resources of the area. The department can also assist with management issues such as river erosion protection works; flood relief; irrigation engineering; agricultural land resource management, as well as the settlement of and support to resource-poor, small-scale and commercial farmers.

❑ **Non-Governmental Organisations (NGOs) and Community Based Organisation (CBOs)**

There are a number of NGOs and CBOs, such as the Surplus People Project, the Aksent Rural Empowerment Initiative and the Ebenhaeser Revitalisation Group in the Olifants-Doorn WMA. Their various fields of specialisation and their close ties with the communities they represent, are vital to the successful functioning of the CMA. All of these structures are extremely well organised and could provide important support to the CMA.

❑ **Universities**

There are also three universities in close proximity to the Olifants-Doorn WMA (University of the Western Cape, Stellenbosch University and the University of Cape Town), as well as two technikons (Cape Technikon and Peninsula Technikon). They could provide expertise that could be harnessed in a number of planning and support activities.

National scientific organisations, such as the CSIR, the Agricultural Research Council and the Human Sciences Research Council also have offices in close proximity to the Olifants-Doorn WMA and are potential sources of support (some have already participated in water resources studies in the WMA).

❑ **Department of Water Affairs and Forestry: Western Cape**

DWAF: Western Cape has been restructured to allow for the support and the allocation of staff to particular WMAs. The Olifants-Doorn WMA has a dedicated team of six DWAF: Western Cape staff members who are responsible for implementing the National Water Act and the Water Services Act in the area.

❑ **Department of Land Affairs**

The Department of Land Affairs' Cape Town District Office has a visible presence in the Olifants-Doorn CMA. This office is responsible for the entire West Coast area (including the municipalities of Matzikama, Cederberg, Bergrivier, Swartland, Saldanha Bay and the West Coast District management area).

The Department of Land Affairs implements a Land Redistribution for Agricultural Development (LRAD) programme for historically disadvantaged South African citizens. This programme is aimed at assisting emerging farmers both at a subsistence and commercial level. The grants made available by this programme are used primarily for the acquisition of agricultural land.

7.3 Organisational Viability

Organisational viability relates to the internal organisational arrangements within the CMA that will enable the agency to fulfil its functions. Special attention will be given to the way in which it addresses capacity building, employment equity and health and safety.

Although there is a degree of consensus that the protection of water resources in the WMA is critical to economic sustainability, there may be a feeling among some stakeholders, particularly in the agricultural sector (the largest water user in the Olifants-Doorn WMA), that the CMA could result in an organisation that costs more than it is worth. Close alliance with WUAs who actively promote catchment management will go a long way towards dispelling this notion. Actively demonstrating that the CMA is “lean and effective” will further help to promote the view that the organisation is cost efficient.

7.3.1 Staffing levels

Because of the request to be a “lean and mean” organisation and because of the expertise and knowledge readily available (especially in the WUAs and municipalities), the staffing structure proposed for the CMA (refer to Section 6) is exceptionally small. This small structure could be challenged, but there is general consensus amongst the stakeholders that the CMA will receive a substantial amount of functional support from existing organisational structures in the area. This will mean that the Olifants-Doorn CMA could most probably have more managerial and liaison functions than other CMAs in South Africa and that most of the technical functions could be outsourced.

The recently completed capacity building programmes have further provided the opportunity for the Olifants-Doorn CMA to outsource a number of its services to emerging local service providers.

A wealth of specialist service providers, such as experienced engineers, agriculturalists, geohydrologists, ecologists and environmentalists reside in the Olifants-Doorn as well as the neighbouring Breede-Overberg and Berg WMAs. Many of these service providers have participated in planning studies for the Olifants-Doorn WMA.

The Olifants-Doorn WMA can draw on the knowledge of water resource management gained by a whole range of local stakeholders who have participated in various water resource studies and in the CMA proposal development process.

Recruitment of suitably qualified staff should not be difficult because of the depth of experience already present in, or in close proximity to, the Olifants-Doorn WMA. Although the Berg CMA has not yet been established, it is envisaged that this CMA will be a large, well-capacitated organisation due to higher volumes of water used. The Olifants-Doorn CMA could share the expertise in the Berg CMA. Similar expertise will be available in the Breede-Overberg CMA.

In addition, the expertise available in the neighbouring Berg and Breede-Overberg CMAs, may also decrease the necessity of a large staff complement. The six staff members proposed should therefore be able to handle the initial functions delegated to the CMA.

The CMA will, however, have to evaluate the situation as more and more functions are delegated and/or as certain community needs have to be addressed. The request from the resource-poor farming sector that the CMA should employ a developmental officer as a matter of priority, is one such an example.

Consideration should be given to recruit as many suitably qualified staff members from the area as possible. This should reinforce the CMA's commitment to address local capacity building and gender issues. The employment of a local service provider as the IWRM co-ordinator and a local HDI woman as the administrative assistant for the DWAF Clanwilliam office, underwrites this responsibility to build capacity within the WMA itself and amongst the previously disadvantaged.

7.3.2 Capacity building and employment equity

The CMA Reference Group has already voiced its support that the CMA should strictly follow the stipulations of the Employment Equity Act. The request was made that DWAF staff members should not necessarily be transferred to the area and that local expertise should rather be given the opportunity to be employed and capacitated.

7.4 Financial Viability

The financial viability relates to the CMA's ability to operate as an independent and financially sustainable institution. Although it is generally accepted that financial independence will only be reached over a period of time, the CMA should always strive to match income with expenditure. The diminishing contributions from DWAF – be it seed funds or subsidies – should always be taken into consideration when the annual budget is compiled.

7.4.1 Revenue collection

Charges for water resource management (WRM) represent the main source of income for a CMA. Water use charges can only be collected from registered users. The viability of any CMA is therefore highly dependent upon the extent of registration within the WMA.

Section 6 of this Proposal shows that the income derived from registered water use and the Working for Water subsidy, will yield sufficient revenue to cover the cost of the CMA structure and its operational functions. The contribution of DWAF towards the cost of initial establishment and commissioning activities will ensure that the CMA will be able to start on a sound financial basis.

As mentioned previously, agriculture uses more than 90% of the water available in the Olifants-Doorn WMA. This makes the buy-in from the farming community, including their willingness to pay water use charges, essential to the financial viability of the proposed CMA.

At the moment those farmers who obtain their water from the largest water user association in the area – LORWUA (the Lower Olifants River Water User Association) – pay R1 537,00 per hectare per year for their irrigation water. The proposed CMA charge of approximately R100 per hectare per year does therefore not constitute a large cost factor to these farmers who are already used to paying for their water supply.

During 2002, DWAF staff attended the meetings of farmer associations and other user groups on request to explain the principles and effect of the charges. During these meetings they dispelled the initial confusion and uncertainty about the economic effect of the charges. The first accounts rendered to users at the end of 2002, also put numerous concerns to bed.

Water use charges can only be collected from registered users. The viability of any CMA is therefore highly dependent upon the extent of registration within the WMA, as well as the ability to collect these charges. The registration process in the Olifants-Doorn WMA has been highly successful – so much so that the registered water use (as in 2002) is more than the assured yield available in the WMA. It does, however, seem that the volume of water per major sub-catchments may need to be re-assessed, especially with regard to the Olifants and Doring Rivers which need to be assessed separately.

Although no DWAF subsidy will be available to the CMA for unallocated allocable water (as the quantity registered already exceeds the allocable volume of water), the recent discovery of possible additional groundwater resources in the TMG aquifer of the Olifants-Doorn WMA could change this situation. As no figures on the yield from this resource are available, this was not considered when the viability of the CMA was calculated.

The ability of the CMA to set up an efficient system to bill water users and collect WRM charges is an important aspect that has to receive attention in the initial phase of the CMA. The WARMS and associated billing system is well developed and already implemented by DWAF. This system will be available to the CMA to ensure smooth take-over of the responsibility for this system.

In spite of the excellent rate of registration, the possibility does exist that some users will not pay their charges, either because the charges are unaffordable (related to their ability to pay) or are deemed to be unacceptable (willingness to pay). Care needs to be taken to minimise the likelihood of default in payment, particularly during the initial phases of CMA establishment, because this would set a bad precedent for cost recovery.

The fact that the WRM charges will already have been recovered for a period of approximately two years before the CMA is established, means that the mind-frame for payment should be in place and that most of the inaccuracies have been corrected.

The general feeling is, however, that there is a willingness to pay water use charges. Meetings held with farmer groups have shown that, what often is perceived as being a non-willingness to pay is mainly a lack of understanding of the way in which user charges are calculated, the reasons for these charges, and the finalisation of the quantities of water used on which the charges are based.

A further aspect that should be taken into consideration is the large number of resource-poor farmers whose charges, where they obtain water from Government water schemes, will be phased in over a period of time. Although DWAF states that this will be done over a period of five years, there is a request from the Olifants-Doorn WMA that it should rather be phased in over a period of 10 years and that the subsidy should be extended to include all resource-poor farmers and not only those who receive water by means of a Government water scheme. The CMA will also have to take into account that the number of resource-poor farmers in the area will increase as more and more land becomes available. Should existing water supplies be re-allocated to ensure an adequate supply of water to resource-poor farmers, this will result in a short-term decrease in income.

7.4.2 Financial challenges

Charges for water resource management (WRM) represent the main source of income for a CMA. The CMA should legitimately only collect charges for the core WRM functions that have been delegated or assigned to it by the Minister. The CMA may, however, incur some costs that can be funded by means of sponsorship or donor support, which is by nature not guaranteed to be permanent.

One such an example is the involvement of Danida, which has resulted in the high priority being placed on the continuation of important activities and projects that support the objectives of IWRM (such as capacity building, youth programmes, involvement in Water Week activities, micro-projects etc). This funding has greatly contributed to the considerable in-kind support provided by stakeholders and other organisations, particularly through the activities of the catchment forums. This funding is, however, not permanent and may be discontinued by the end of 2003/04 financial year. It is important that the momentum achieved should be maintained before and after CMA establishment.

Another type of financial support that the CMA should monitor, is the 90% subsidy provided DWAF towards the shortfall in the Working for Water costs with specific regard to the agricultural charges. Any decrease in subsidy will mean a higher agricultural charge – which could lead to a possible non-payment culture and therefore a decrease in the revenue obtained.

7.5 Technical / Functional viability

Technical viability relates to the functional evolution of the CMA, and includes the capacity within the organisation and the resources available to the organisation to perform its functions.

7.5.1 Development of a catchment management strategy

A number of studies have already been done in the Olifants-Doorn WMA. These are described in more detail in the *Statusverslag oor Studies en Verwante Aktiwiteite in WBG 17* attached as Annexure 7.2. A large study of the Olifants-Doorn basin was completed a few years ago, while several other studies, such as the Sandveld groundwater study, groundwater Reserve determinations and the WODRIS (Western Cape Olifants-Doring River Irrigation Study), are being undertaken at the moment. These studies will provide an excellent point of departure for the CMA to draft its Catchment Management Strategy and Plan. It will also assist the CMA with the implementation of its delegated functions.

7.5.2 Co-ordination of water-related activities

Institutional capacity is fairly strong in the WMA. Large WUAs, well-structured local authorities and wall-to-wall catchment forums that represent all stakeholders, are active and supportive of the new CMA.

The CMA will therefore be able to effectively execute functions such as the co-ordination of activities related to water users and the water management institutions in its area. The promotion of community participation will be made easy because of the wall-to-wall catchment forums.

The function to manage, monitor, conserve and protect water resources and to implement catchment management strategies is regarded as the backbone of the CMA's functions. The large number of highly effective WUAs in the WMA will simplify the CMA's tasks further.



8. THE WAY FORWARD

The CMA process in the Olifants-Doorn WMA has been an extremely inclusive and participative process. The first challenge is to keep this momentum going during the stage when DWAF and the Minister are approving this Proposal. This could most probably be partly overcome by the two Reference Group meetings already planned for the remainder of 2003. These meetings will focus on the role and functions of (a) the Advisory Committee and (b) the Governing Board. Nominations for persons from the area to serve on the Advisory Committee, as well as recommendations for people to serve on the Governing Board, will be requested at the same time.

As it may take up to a year for the CMA to be approved and established, DWAF: Western Cape should make provision for at least two additional Reference Group meetings during 2004. These meetings could serve the purpose of providing feedback on the progress with the CMA establishment, as well as report on the various water resource studies being undertaken in the WMA. It would also serve to continue with the capacity building of stakeholders with regard to water issues.

As soon as this Proposal has been accepted by DWAF and the intent to establish the CMA has been published in the Government Gazette, a full round of meetings will be held with the Catchment forums. A number of larger public information meetings will also be held.

Although the existing Reference Group consists of a large number of people (approximately 100), consideration should be given to retain this group as *is* for transition into a Catchment Management Committee (CMC). The cost of splitting the group into possibly two CMCs, should be carefully considered before such a decision is made. Apart from the fact that it may often cost more to hold separate meetings, the possibility of dividing the existing unity created by the Reference Group meetings may not be worth the risk.

8.1 Advisory Committee and Governing Board

The proposals for the appointment of both the Advisory Committee and the Governing Board will be done by DWAF. Nominations for representatives to the Advisory Committee will be done by means of the two Reference Group meetings scheduled for August 2003. Discussions will be held on the composition of the Governing Board and an opportunity will be created for the Reference Group to interact with the Advisory Committee and to provide their proposals and input towards the composition of the Governing Board.

8.2 Interim Management Team

The CMA will not immediately start to function once the establishment of the CMA has been approved. Firstly a Governing Board must be appointed, who will have to advertise for a suitable candidate to be appointed as the CEO of the Olifants-Doorn CMA. The Governing Board will, therefore, need some administrative support during the period when the CMA has not yet become functional. The CEO could also require this administrative support until such time as when the first staff appointments have been made.

Although the offer for administrative assistance from either the West Coast District Municipality (WCDM) or LORWUA could be taken up, each has their constraints. The offices of the WCDM are situated outside the WMA, and the use of LORWUA could be construed as too close an alliance with a WUA that will most probably in future perform quite a large number of functions on behalf of the CMA.

An interim management team could be the solution. A dedicated catchment management team is already functioning as part of DWAF's restructuring programme. This team will work in close

collaboration with the CMA Reference Group to ensure the smooth transition to a functional CMA. Some, or all of this team, could serve on the Interim Management Team.

DWAF already has a regional office in Clanwilliam, staffed at present by the area manager, the IWRM project co-ordinator and an administrative assistant. This team could be retained to form the core of the Interim Management Team. The possibility of including at least a fourth person to the team as a capacity building / developmental officer, should be considered. The ideal would be to find a suitable candidate from the Forum Champion programme. The cost of this Interim Management team should be regarded as DWAF's contribution towards the initial establishment cost of the CMA.

8.3 Continuation of forum involvement

A concerted effort must be made to maintain the momentum of the forums during and after the CMA's establishment. The formal establishment of a Catchment Management Committee (be it the entire existing CMA Reference Group or a smaller group elected from the Reference Group) will commence soon after the CMA is established. The roles and responsibilities of this committee, including its interaction with the catchment forums, will then be finalised.

The suggestion that the existing administrative assistant post be retained and that a developmental officer be appointed as part of the Interim Management Team, will ensure continued capacity building and involvement by the catchment forums.

8.4 Implementation Plan

Issues raised during the consultative process will be made available to the Governing Board, as well as to the CEO after his/her appointment. The Internal Strategic Perspective (ISP) document drawn up by DWAF will further assist the Governing Board and CEO to draw up an implementation plan for the CMA.

Although a specific implementation plan with time frames could have been drawn up as part of this Proposal, the CMA Reference Group was of the opinion that Table 4.1 provides an adequate guideline that could be refined by the Governing Board and the CEO. The following specific issues raised during the process must, however, be taken into consideration before any decisions are made:

- ❑ **Representativity:**
 - Special attention should be given to engage more women and disabled persons.
 - Ensure that the staff complement is representative of the area's demographics.
- ❑ **Capacity building:**
 - Continued support to catchment forums.
 - More training programmes.
 - The appointment of a developmental officer.
 - Regular feedback to stakeholders (regular Reference Group/CMC meetings – some of them in the form of public meetings).
 - Make use of emerging local service providers.
- ❑ **Co-operative governance**
 - Co-operate and network with existing structures and organisations.



List of Annexures

ANNEXURE	CONTENT
1.1.1 – 1.1.3	Report on the Public Participation Process: February 2001
1.1.2	Report on the Public Participation Process: July 2002
1.1.3	Report on the Public Participation Process: March 2003
1.2.1 – 1.2.8	Minutes of Reference Group meetings
1.3	Reference Group Members
1.4	NWRS Roadshow Feedback
1.5.1	Executive Summary: Capacity Building Programmes
1.5.2	IWRM Newsletters & Pamphlets
1.6.1	DWAF/Danced IWRM project. Output 2: Communication
1.6.2	DWAF/Danced IWRM project. Output 2: Newsletter
1.7	Needs Assessment Workshop Report
1.8	Secretarial Workshop Report
1.9	IWRM Questionnaire & results
1.10.1	Report to IWRM National Steering Committee: 11 Sept 2002
1.10.2	Report to IWRM National Steering Committee: 12 Feb 2003
1.11	Membership list of each forum: incl indication of race & gender
2.1	Chairpersons' reports
2.2	Government Gazette No. 23711
2.3	NWRS: Map of Catchment
2.4.1	NWRS Section D.17.2
2.4.2	NWRS Section D.17.3
3.1	Discussion Document 1
4.1	Discussion Document 2
5.1	Discussion Document 3
6.1	Discussion Document 4
7.1	Declaration of Support
7.2	Status Report on Studies and Related Activities in WMA 17

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