

## **Olifants Water Management Area: Catchment Management Agency Establishment**

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### **Abstract**

South Africa's Department of Water Affairs and Forestry (DWAF) started the process of establishing a Catchment Management Agency (CMA) in the Olifants Water Management Area (WMA) in March 1998. The emphasis during the early stages was on getting representatives from water users in the catchment, and sharing information on the new water legislation (specifically related to the proposed catchment management agencies) and existing DWAF projects in the catchment. At that stage DWAF already identified that a special effort would have to be made to involve emerging farmers and potential water users through water related and water unrelated community structures. Such an effort was taken forward in 1999/2000 with the appointment of consultants to identify and brief these users and potential users before meetings, and to assist them in attending the relevant meetings. The consultants would also assist DWAF in establishing suitable structures for drafting the proposal to the Minister of DWAF for establishing a CMA in the Olifants, assist in building capacity of participants, prepare the proposal to the Minister and manage the project up to the formal establishment of the Olifants CMA.

During the process frustrations regarding lack of water (domestic supply, irrigation supply) were prevalent. Those were noted but DWAF was of the opinion that they could not be addressed through the project but would get high priority when the strategy would be developed as part of the next phase of the management of the Olifants water resource where all could then participate. Concerns were also referred to relevant sections in DWAF where appropriate.

A smaller team of consultants started the establishment of a small-scale irrigation farmers forum. They started the process by having nine workshops throughout the catchment where emphasis was put on getting the expectations of the participants and then briefly looking at existing structures and how those could be used as vehicles for participation of the people in the CMA process, and in the longer term, as formalised structures where small-scale farmers could be represented to get their needs addressed. The expectations mentioned centred around getting water (access to drinking water and water for domestic use, water for agricultural purposes) and then using it efficiently and effectively (assistance from government in providing water and sanitation, and agriculture-related finances, equipment, land, training, market information, etc.). This now has to go forward.

The approach used during the process was to get the public involved through two rounds of public meetings held in the five sub-catchments in the WMA. Consultants familiar with the area assisted in identifying relevant stakeholders and assisted them in attending. During the meetings one of the aims was to ask people to nominate

*representatives who could bring the perspective of the users during the drafting of the proposal. The idea was to work with a single smaller group of people (the Olifants Reference Group) who would participate in the drafting of the proposal and then give feedback, to the people they represent and to the team drafting the proposal. Other components of the process included discussions with a DWAF Reference Group (established because the process is so new), a review by IWMI, and the establishment of an advisory committee to advise the Minister on the composition of the proposed CMA governing Board.*

*A proposal is being drafted, containing the proposed name and water management area; description of the significant water resources in the WMA and information about the existing protection, use, development, conservation, management and control of those resources; proposed functions; funding; feasibility of proposed CMA in respect of technical, financial and administrative matters; and details on the consultation already undertaken and the result of the consultation.*

*As a consequence of the deliberations on the functions that a CMA would do, but also when discussing "where" and "how" (through which structures) water users and interested parties would participate, the proposed structures to be established for future water resource management were discussed. These would include a Governing Board; Regional Catchment Management Committees; Task Committees and an Operational, Technical and Social Support structure. Where funding is concerned, the idea is that the costs associated with the functioning of the CMA would be paid by the water users according to the policy explained in the National Pricing Strategy. Provision is made in the strategy for subsidising poor water users. Details on financial support from government is still being discussed.*

*A new institution is thus being developed for management of the water resources in the Olifants WMA. Water users and other interested parties in the WMA would be part of this institution to which the responsibility for WRM could be delegated where possible and appropriate.*

**Acronyms used:**

CBOs:	Community Based Organisations
CMA:	Catchment Management Agency
DWAF:	Department of Water Affairs and Forestry
GB:	Governing Board of the CMA
NGOs:	Non-Governmental Organisations
NWA:	National Water Act, 1998 (Act 36 of 1998)
WMA:	Water Management Area
WRM:	Water Resource Management
WUA:	Water User Association

## **1. Introduction**

South Africa went through major political changes in 1994 with the first democratic elections being held. Since then radical changes have been made in promulgation of new or amended legislation to give effect to the political changes. The new water legislation reflected the changes that have to take place to equal the imbalances created previously and to lay the foundation for a society based on democratic values, social justice and fundamental human rights. Significant additional changes were also made in how water resource management (WRM) would be done. All new requirements were reflected in the purpose of the National Water Act (NWA), promulgated in 1998 (Box 1).

### **Box 1: Purpose of the National Water Act, 1998 (section 2)**

The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors the following:

- (a) Meeting the basic human needs of present and future generations;
- (b) Promote equitable access to water;
- (c) Redressing the results of past racial and gender discrimination;
- (d) Promoting the efficient, sustainable and beneficial use of water in the public interest;
- (e) Facilitating social and economic development;
- (f) Providing for growing demand for water use;
- (g) Protecting aquatic and associated ecosystems and their biological diversity;
- (h) Reducing and preventing pollution and degradation of water resources;
- (i) Meeting international obligations;
- (j) Promoting dam safety;
- (k) Managing floods and droughts;

and for achieving this purpose, to establish suitable institutions and to ensure that they have appropriate community, racial and gender representation.

Slogans used by the Department of Water Affairs and Forestry (DWAF) when administering and implementing the act are "Ensuring some for all forever" and "Viva water pure and clean." The words "efficiency", "equity", "sustainability" and "representativity" give the essence of the purpose of the act.

An important new concept contained in the NWA, 1998, is the establishment of catchment management agencies (CMAs) within delineated water management areas (WMAs). One of the main objectives for the establishment of the CMAs would be to provide institutions where stakeholders can participate in the management of the water resource.

Some of the principles and objectives of relevance to new envisaged institutions as decided early on in the process when the new water law was drafted are shown in Box 2.

**Box 2: Fundamental principles and objectives for a new water law in South Africa: water institutions (DWAF, 1997)**

- Principle 22: The institutional framework for water management shall as far as possible be simple, pragmatic and understandable. It shall be self-driven and minimise the necessity for state intervention. Administrative decisions shall be subject to appeal.
- Principle 23: Responsibility for the development, apportionment and management of available water resources shall, where possible and appropriate, be delegated to a catchment or regional level in such a manner as to enable interested parties to participate.
- Principle 24: Beneficiaries of the water management system shall contribute to the cost of its establishment and maintenance on an equitable basis.

The boundaries of the WMAs were established through legislation in October 1999 and are indicated in Figure 1. The Olifants is one of these 19 areas (WMA 4 on Figure 1, and Figure 2).

Figure 1: Map of South Africa, showing boundaries of water management areas

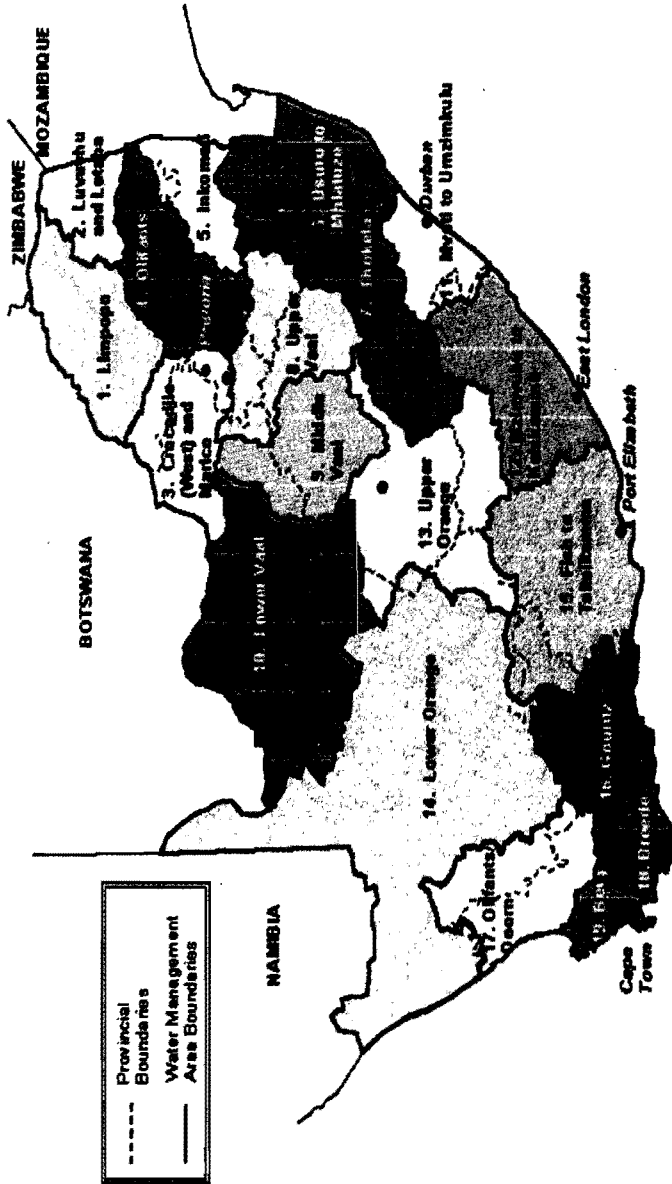
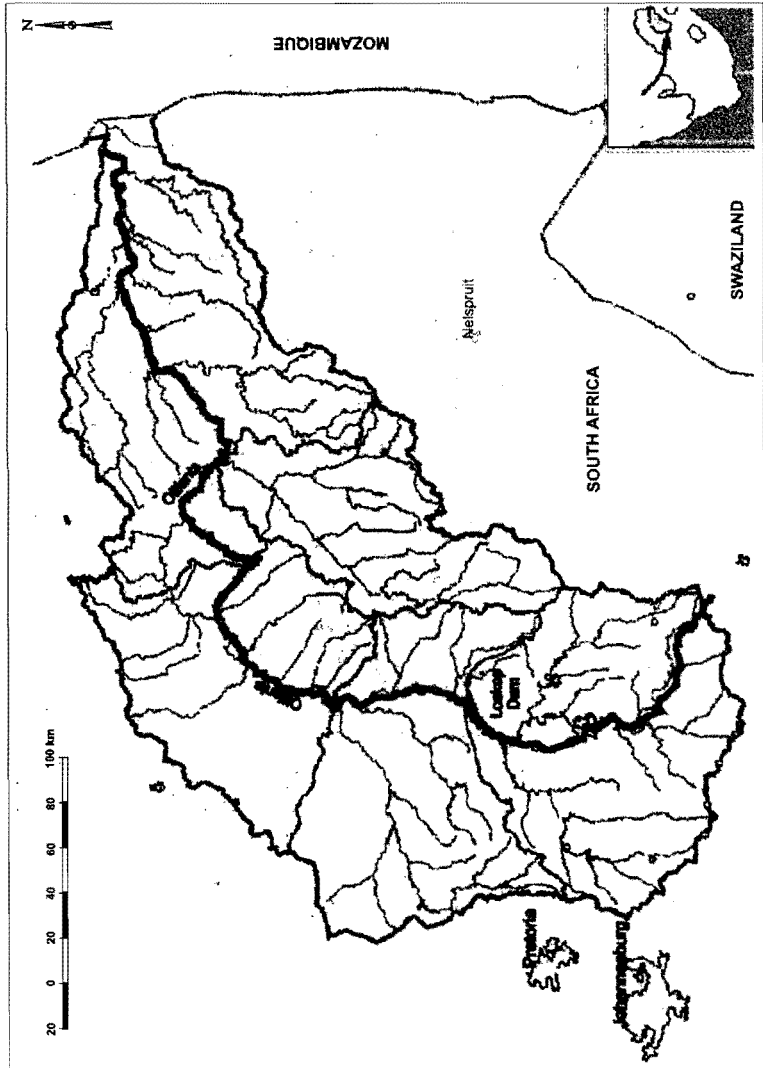


Figure 2: Map of the Olifants River Basin



The definition of a WMA as contained in the NWA, 1998, is given in Box 3.

**Box 3: Definition of a Water Management Area (section 1[xxv])**

“water management area” is an area established as a management unit in the national water resource strategy within which a catchment management agency will conduct protection, use, development, conservation, management and control of water resources.

## **2. The process**

### **2.1 Initial and later process**

The process to establish the CMA started in March 1998 when the idea was deliberated at a joint meeting of committees established previously in 1994. These committees were co-ordinating and technical advisory committees for the Middelburg and Witbank dams and the Klipspruit River and consisted of the following stakeholders: DWAF, mining houses, individual mines, power generation (Eskom), industry, city councils and government departments. An interim task team was formed to take the process of water resources management (including the establishment of the CMA) forward in the catchment and the first meeting was to be convened by the Olifants River Forum. This was an existing body creating awareness on river management with the mines and nature conservation (Krugers National Parks) as the main participants.

The task team focussed on getting a representative group of people together with the main aim of setting up the CMA. Various meetings were held with different stakeholders where information was shared on the main aim and to get input from them.

During the process it became apparent that a special effort had to be made to involve civil society at large and emerging farmers or potential new farmers. This transpired as large areas of the WMA were part of the former homelands where very little services were provided and limited agricultural development took place. Newly elected transitional local councils struggled to provide these services immediately and conflict was also created between them and the traditional authorities in the areas, on this and other matters. All newly elected parties and existing old structures thus had to become part of the process for the establishment of the CMA.

The DWAF decided to fund the process for the establishment of the CMA and to appoint consultants to assist with getting representative committees in place that could draft the proposal. The latter is a requirement of the NWA when establishing CMAs.

In May 1999 a team of consultants were appointed to assist DWAF with the above and the establishment of the governing board—the first body to be appointed by the Minister when establishing the CMA. The team consisted of managers of the project, experts on the water use and impacts associated with mining and irrigation, people with experience in agricultural use of water by emerging farmers, facilitation of public meetings and social aspects. Two newly developed consultants, Bavumile Community Development Initiative and KMI Communication, consisting of people who are very familiar with the catchment, were part of the team.

Important elements of the later process are:

- establishing a representative stakeholder reference group;
- drafting of the proposal for the establishment of the CMA;
- discussing the process with a DWAF reference group—in view of the implementing the new act where all the supporting policies and legislation are not yet developed;
- reviewing of the CMA process—reviewed in terms of international and the new national developments.

To get a representative stakeholder group, an existing group of stakeholders (established as part of the consultative process to determine the Olifants river ecological reserve) was expanded. For the latter, public meetings were held in five areas in the WMA (the boundaries of sub-catchment areas were used to determine the five areas).

The whole process is shown in Figure 3.

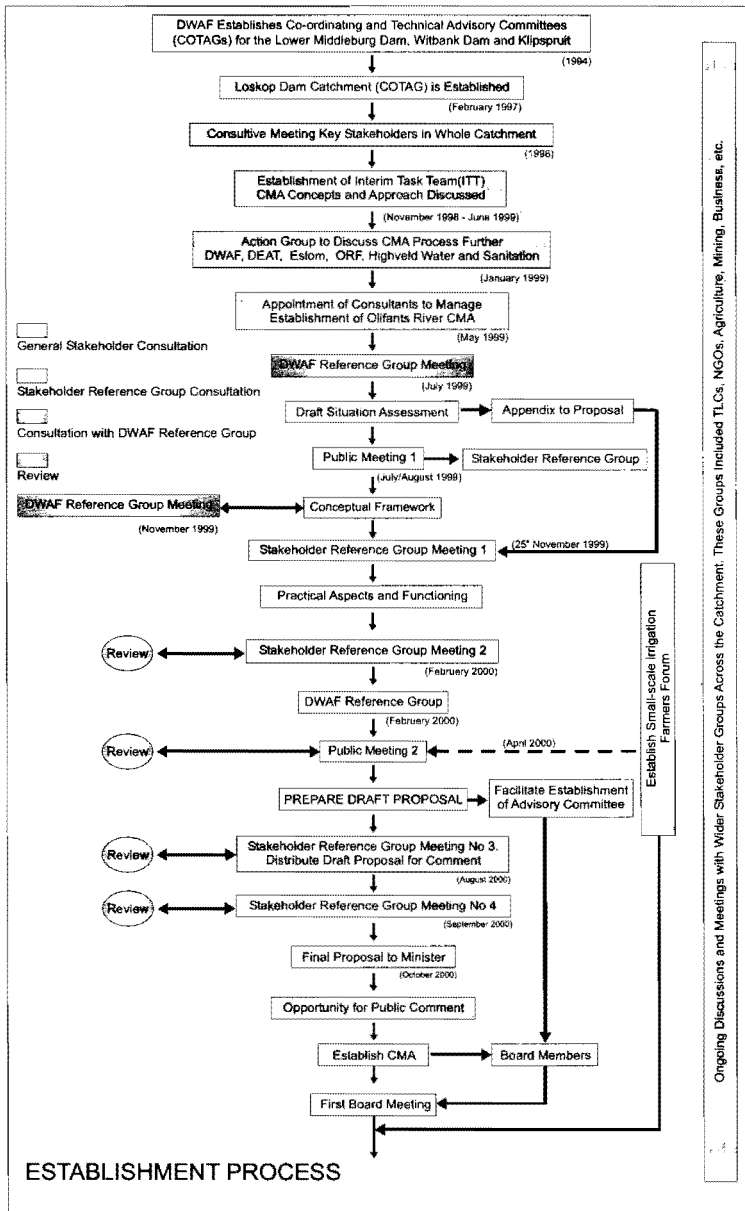
## **2.2 Stakeholder identification and participation**

As mentioned, existing structures were involved in the process and included the DWAF advisory committees in the Upper Olifants catchment and the Olifants River Forum. Other existing structures that were<sup>11</sup> contacted to nominate representatives for the process included the irrigation boards, water boards, transitional local councils, district councils, traditional authorities, NGOs and the South African National Civic Association. Other civil society structures contacted included Community Based Organisation (CBOs) and the youth.

Meetings were also held with different sectors and information was shared in an informal and formal manner when people were contacted for meetings. People who were not familiar with the new process were briefed beforehand and in later instances pre-meetings were held if people felt that they could not participate meaningfully due to lack of understanding or inability to attend previous meetings. Material used in the process included workbooks (documents prepared for the workshops containing information and “exercises” that would be done during the workshops), newsletters, letters and press releases.



Figure 3: Process followed for the establishment of the Olifants CMA



Various methods were used during meetings to enable people to participate. These included discussions in smaller groups on identified topics and plenary sessions. Translations were provided in the public meetings.

### **2.3 Small-scale farmer forum**

A special effort is being made to involve small-scale farmers in the process. The issues surrounding their involvement are touched on in the next section. These farmers often do not yet have access to irrigation water and are not organised into boards or water user associations. They thus have to be contacted almost on an individual basis. It was decided to try to assist them to form a forum that could then nominate people to act as spokespersons during the CMA establishment process. The questions stated in Box 4 were put as terms of reference to the consultants who assisted in the process.

This process has just started and only one round of workshops has been held throughout the catchment. During the workshops an initial effort has been made to obtain answers to the questions posed in the terms of reference (Box 4). This process will be taken forward during 2001.

#### **BOX 4: Small-scale farmer forum**

- Do they exist?
- Where are they?
- What are their current activities?
- How could they be defined?
- Are they interested in forming a forum?
- What functions could it perform?
- What would be the structure and functions of the forum?
- Would they require a budget?

Transport was organised and paid for, for people who could not afford or whose constituent could not afford to pay for it.

### **3. Issues**

#### **3.1 Representation**

A major question asked during the process is how do you identify and involve potential water users in the process. The inequality in South Africa is so extensive that new water users will probably have to emerge with time. These potential users will probably come from the civil society and small-scale sectors and that was also why so much effort was put into involving them. The CMA would probably be one of the main vehicles through which the NWA would be implemented and its purpose fulfilled.

Another question raised was to what extent should people at grass roots level be involved in the process. Again the idea was to involve people if they expressed interest and to concentrate from the DWAF's side on existing structure such as local municipalities, civil organisations (SANCO), traditional leaders and CBOs for nominating representatives. A special effort was made in the specific case of small-scale farmers to go to grass roots to get representation and spread the message.

Another concern especially of DWAF is that by far the largest volume of water is still used by white-owned companies and farmers. These structures are also well organised around water usage and thus also well represented. They are also well positioned to participate in processes.

#### **3.2 Problem to participate meaningfully: awareness, capacity-building and empowerment**

The public generally has little knowledge on water resource management and legislation. They, however, now have the opportunity to participate in the management of this resource. Thus, there is a huge need for awareness, empowerment and capacity-building in general.

Many of the existing water users are well established and have the means to protect their interests well, while new users are still in a disadvantaged position.

One of the main challenges facing DWAF would be to ensure that especially the previously disadvantaged people could participate meaningfully—peoples' voices must be heard and their participation must be effective and influential.

#### **3.3 General**

There are still extensive conflicts, racism, lack of transformation and inequalities in South Africa in general. Examples of such conflicts are given in Box 5.

#### **Box 5: Examples of conflicts**

- people who have water (and the associated improved quality of life), those who are in the process of getting water and those that do not yet have it;
- conflicts between traditional or tribal authorities and newly elected local councils or municipalities;
- conflicts between communities and newly elected local councils or municipalities;
- conflicts between water service providers (or non-providers) and communities;
- conflicts between water users and government departments on non-delivery of services in general, etc

Not even people's basic needs regarding water and sanitation are fulfilled. Understandably, therefore a lot of tension is created when people are involved in water related projects.

Some water users want to get the best deal possible for themselves in the process (at the cost of other water users).

### **3.4 Other issues**

Other issues identified during the process included:

- an urgent and serious need for water for especially irrigation purposes for previously disadvantaged farmers
- water users do not want to register and pay the water use management charge (see point 4.6)
- tourism as a sector is not contributing to the water use management charge as a water "user" at this point in time and the other sectors feel that they benefit financially by using the "goods and services" provided by the Olifants River

## **4. The proposal**

### **4.1 Introduction**

The proposal is now under drafting (DWAF, 2000). Section 77 of the NWA contains the requirements on what should be contained in a proposal for the establishment of a CMA. The information contained in the section is provided in Box 6.

**Box 6: Proposal for the establishment of a CMA (NWA, section 77)**

77(1) A proposal to establish a CMA must contain at least:

- (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 WMA, 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 consultation in developing the proposal and the results of the consultation.

(2) The Director-General may assist a person to develop such a proposal.

### **4.2 Description of Olifants WMA**

Salient detail on the Olifants WMA is that –

- it covers an area of 54,388 km<sup>2</sup>
- it has a population of about 3,400,000
- it had a water demand of –

- 1,135.2 million m<sup>3</sup> per annum in 1995 and
- 1,375.2 million m<sup>3</sup> per annum have been predicted for 2010
- it is a highly water-stressed catchment and has to import high-quality water from the Usutu (a neighbouring catchment) for power generation
- the catchment is highly developed
- pollution and water quality problems arise from mining activities, industries, power generation and agriculture use of water
- another feature is that the lower part of the WMA forms part of a national park—the Kruger National Park—that is a major tourist attraction in South Africa
- it is an international river—the Olifants flows into Mozambique

### **4.3 Issues identified**

The proposal identifies the following major issues that DWAF already faces and that the new CMA when established, will also have to address:

- The WMA's resources will be fully utilised by 2010. Strategies will have to be developed to address the growing demand and the imbalances evident throughout the WMA. These could include -
  - Re-allocation of water amongst users;
  - Rigorous management of demand;
  - Importation of water from other basins
- The greatest growth will be in urban demand, which is predicted to increase from 12 percent to 17 percent of total demand.
- New irrigation allocations for emerging farmers will have to be done.
- The WMA is already highly regulated with 30 large dams and 2,500 small dams. There is already a problem in maintaining flows in the lower region of the WMA during winter and droughts.
- Water quality issues include point and diffuse pollution from mining, industrial and agricultural activities. Pollution includes high salinity, high concentrations of metals, low pH. Poor land use practices are resulting in high silt loads in some areas in the catchment.
- Erosion and over-grazing occur in various parts of the catchment.

#### **4.4 Functions: Water resources management**

The initial functions of CMAs are described in section 80 of the NWA, 1998, and are provided in Box 7.

##### **Box 7: Initial functions of CMAs (NWA, section 80)**

80. Subject to Chapter 2 and section 79, upon establishment of a CMA, the initial functions of a CMA are:

- (a) to investigate and advise interested persons on the protection, use, development, conservation, management and control of the water resources in its WMA;
- (b) to develop a catchment management strategy;
- (c) to co-ordinate the related activities of water users and of the water management institutions within its WMA;
- (d) to promote the co-ordination of its implementation with the implementation of any applicable development plan established in terms of the Water Services Act, 1997 (Act 108 of 1997); and
- (e) to promote community participation in the protection, use, development, conservation, management and control of the water resources in its water management area.

Schedule 3 of the NWA, 1998, gives the powers which may be exercised and duties to be performed by CMAs on assignment or delegation. These are briefly given in Box 8.

##### **Box 8: Powers which may be exercised and duties to be performed by CMAs on assignment or delegation (NWA, Schedule 3)**

- Power to manage, monitor, conserve and protect water resources and to implement catchment management strategies
- CMAs may make rules to regulate water
- CMAs may require establishment of management systems
- CMAs may require alteration to waterworks
- CMAs may temporarily control, limit or prohibit use of water during periods of water shortage

In practice this also includes that CMAs can issue licences for water use and control potential pollution sources through enforcement of development of Integrated Water Management Plans, implementation of best management practices, participating with other government departments in evaluating Environmental Management Programmes and Environmental Impact Assessments.

Another challenge will be for the CMA to actively assist DWAF in the protection of the resources as explained in Chapter 3 of the NWA. This entails determining and giving effect to the reserve, and determining and ensuring that the class of the water resource is maintained.

The definition of the reserve is provided in Box 9 and the description of the classification of water resources and resource quality objectives given in Box 10.

**Box 9: Reserve means the quantity and quality of water required (NWA, section 1 [xviii])**

- (a) to satisfy basic human needs by securing basic water supply, as prescribed under the Water Services Act, 1997 (Act 108 of 1997), for people who are now or who will, in the reasonably near future, be:
  - (i) relying upon;
  - (ii) taking water from; or
  - (iii) being supplied from the relevant water resource; and
- (b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource.

**Box 10: Classification of water resources and resource quality objectives (NWA, Chapter 3 part 2)**

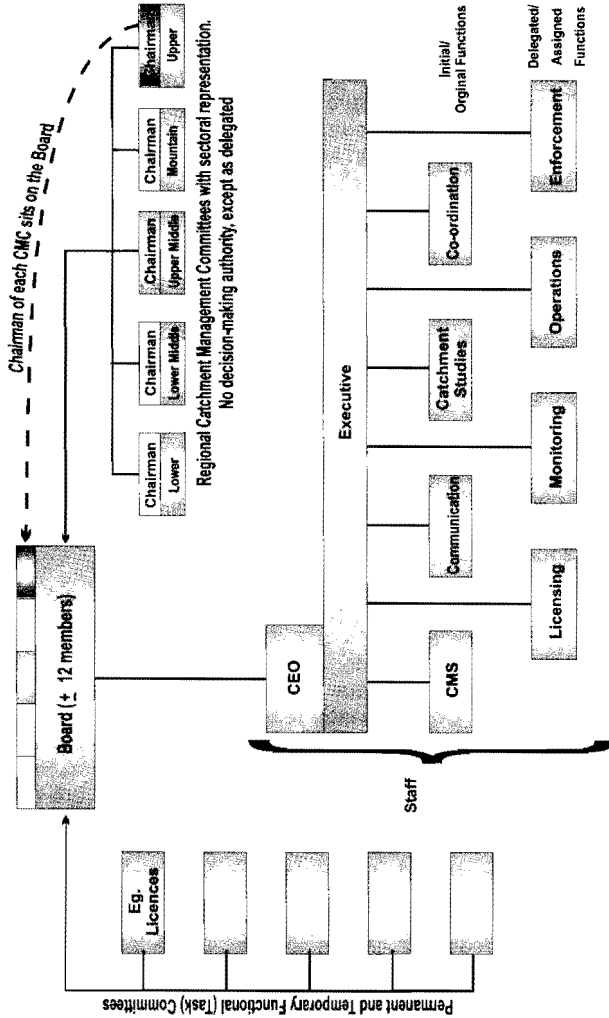
...the Minister is required to use the classification system established in Part 1 to determine the class and resource quality objectives of all or part of water resources considered to be significant. The purpose of the resource quality objectives is to establish clear goals relating to the quality of the relevant water resources. In determining resource quality objectives a balance must be sought between the need to protect and sustain water resources on the one hand, and the need to develop and use them on the other. Provision is made for preliminary determination of the class and resource quality objectives of water resources before the formal classification system is established. Once the class of a water resource and the resource quality objectives have been determined they are binding on all authorities and institutions when exercising any power or performing any duty under this Act.

#### **4.5 Structure**

The structure as proposed for the CMA at this point in time is given in Figure 4.



Figure 4: Proposed structure of the Olifants River CMA



**ESTABLISHMENT PROPOSED STRUCTURE  
OF THE OLIFANTS CMA**

The structure proposed is in line with what is required in the new legislation and guidelines already developed, but has not been tested in practice. The CMA would consist of:

- A Governing Board (GB) consisting of about 12 members. The members of this board have to be appointed by the Minister who will do so with the object of “achieving a balance among the interests of water users, potential water users, local and provincial government and environmental interest groups” (section 81(1) of NWA, 1998).
- Regional Catchment Management Committees. The thinking at this point in time is that there should be five such committees, one in each of the five sub-catchments of the WMA. The different water use sectors of that sub-catchment would mainly be represented there. These committees have to be established by the GB and can then perform any of the board’s functions within a particular WMA. It can also be established in an advisory capacity (section 82(5) of NWA, 1998).
- Task Committees. These committees should also be established by the GB to perform specific functions (see previous point). Should the GB decide to delegate a power to such a committee it must consist only of members of the GB or employees of the CMA. A power to authorise the use of water can only be delegated to a committee consisting of three or more members of its GB (sections 82(5) and 86 of NWA, 1998),
- Operational and technical support structure (staff). This part of the structure would constitute the employees of the CMA and would consist of the chief executive officer (CEO), executive and other staff required to do the initial and delegated or assigned functions as appropriate.

#### **4.6 Funding**

The NWA, 1998, provides for water use charges to be levied for the funding of the direct and related costs of water resources management, development and use (NWA, Chapter 5). Only the water resource management charge that could be used for the funding of water resource management is considered at this point in time when determining whether it would be feasible to establish the Olifants CMA. The functions that could be funded from this charge are described in “A Pricing Strategy for Raw Water Use Charges” (Government of South Africa, 1999) and can include functions performed by the DWAF and/or management institutions exercising delegated or assigned powers under the NWA.

Until such time as CMAs are established, the water use charge would have to fund water resource management services being provided by DWAF.

Box 11 explains the purpose of the levying of water use charges as explained in the NWA.

**Box 11: Financial provisions  
(NWA, Introduction to Chapter 3 and Part 1)**

Chapter 3: This Chapter deals with the measures to finance the provision of water resource management services as well as financial and economic measures to support the implementation of strategies aimed at water resource protection, conservation of water and the beneficial use of water.

Part 1: In terms of Part 1 the Minister may from time to time, after public consultation, establish a pricing strategy which may differ among geographical areas, categories of water users or individual water users. The achievement of social equity is one of the considerations in setting differential charges. Water use charges are to be used to fund the direct and related costs of water resource management, development and use, and may also be used to achieve an equitable and efficient allocation of water. In addition, they may also be used to ensure compliance with prescribed standards and water management practices according to the user pays and polluter pays principles. Water use charges will be used as a means of encouraging reduction in waste, and provision is made for incentives for effective and efficient water use. Non-payment of water use will attract penalties, including the possible restriction or suspension of water supply from waterworks or of an authorisation to use water.

A CMA must be funded from the levies mentioned above, money appropriated by Parliament and money obtained from any lawful source for the purpose of exercising powers and carrying out its duties in terms of the NWA.

At the time of presenting this paper, the possible sectoral charges for the Olifants CMA have not been determined. The following information is compiled to assist in determining this charge:

- total existing water requirement for each sector and within the five sub-catchments;
- the assurance of supply associated with each sectoral use;
- the envisaged total budget needed to exercise original and delegated or assigned functions.

An example of annual sectoral charges set for a WMA in terms of the raw water pricing strategy is given in Table 1.

**Table 1: Example of annual sectoral charges set for a WMA in terms of the raw water pricing strategy**

	Sector			
	Municipal water use	Industrial water use	Irrigation water use	Forestry water use
Sectoral charge	0.83 c/m <sup>3</sup>	0.83 c/m <sup>3</sup>	0.54 c/m <sup>3</sup>	0.49 c/m <sup>3</sup>

Note: 1 South African cent = 0.13 US cents (October 2000)

## **5. The way forward**

The proposal being prepared will be submitted to the Department and the Minister of DWAF in early 2001. The evaluation process will take about a year, after which the governing board will be appointed by the Minister. A separate parallel process will also have to be followed as the Minister has to be advised by an advisory committee on whom he should appoint to the GB (section 81(3) of the NWA, 1998). This process will be initiated as soon as more clarity is received on what is required.

The Mpumalanga Regional Office will also start the process of drafting the catchment management strategy for the WMA during the second half of 2001.

The intention is to distinguish between the process of drafting the strategy and the content of the strategy itself. A lot of effort will go into a preparation phase during which stakeholders will be re-identified where necessary, roles and responsibilities of stakeholders will be determined, methods will be developed to ensure proper two-way communication between water users and their representatives on relevant structures drafting the strategy. During this stage key performance indicators will also be decided on for the drafting process.

Another key objective would be to chart the drafting process and determine what would be decided by whom and when.

The drafting of the strategy will probably occur within different phases –

- determine a vision for the catchment
- re-visit and re-identify water resource management issues
- determine strengths, weaknesses, opportunities and threats for WRM in the WMA
- determine broad prioritised WRM objectives for the WMA, catchments and sub-catchments regarding

- situation assessment (DWAF, 2001);
- foundation strategies;
- supporting strategies; and
- integration between the above.

determine detail of prioritised objectives in terms of

- action plans;
- responsibilities; and
- time schedules.

The CMS then has to be submitted to the Minister of DWAF for approval after which it can be implemented.

The CMA establishment process moves through different stages of participation of the public in water resource management, starting with fairly informal discussions, progressing into the establishment of the GB and other components of the CMA, through to ultimately having a high level of awareness and participation at all levels in WRM.

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