Section B

South Africa's recent experiences

The three papers in this section present aspects of changes in water policy and water law, which have been occurring in South Africa in the past decade and are under active development and testing

The papers describe:

the overall legal and policy innovations;
the consultation processes being developed for establishing participatory river-basin management;
and the inter-relation of water management with equity issues including poverty and gender

South Africa's New Water Policy and Law

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Abstract

South Africa's water policy is going through a period of rapid changes, following the country's radical political changes of the early 1990s. The paper describes the principal aspects of these changes, which are based on the new National Water Law of 1998. The law divides the country into 19 Water Management Areas, and prescribes processes by which strategies and management institutions will evolve for these Water Management Areas, using the principle of stakeholder participation to ensure that each such area can develop its institutional and management systems to satisfy its own specific situation. The institutional roles of Catchment Management Agencies, Catchment Management Strategies, and Water Users' Associations are explained in this context.

1. Introduction

Change is not always so exciting. Often change is a scary concept that brings with it uncertainty and fear of the unknown. However, change has become part and parcel of South Africa and, in many ways, its people see a bright future amidst all the changes that have swept across this beautiful land. Certainly, these changes will provide improvements to the lives of present and future generations of South Africans.

The National Water Policy, the National Water Act (Act 36 of 1998) and the Water Services Act (Act 108 of 1997) are transformational masterpieces that will not only redress the problems of the past, but will also help to build a better future. This is very much embodied in the purpose of the National Water Act, which is to ensure that the nation's water resources are protected, used, developed, conserved, managed, and controlled in ways that take into consideration such factors as, inter alia, meeting the basic human needs of present and future generations, promoting equitable access to water, redressing past discrimination, facilitating social and economic development, and protecting aquatic and associated ecosystems.

The slogan of the Department of Water Affairs and Forestry (DWAF) is "Viva water pure and clean, Viva forests rich and green". The statement "Viva water pure and clean" celebrates the meaning of water to life and the importance of water to South Africa; however, whilst celebrating, we have to consider carefully how we use this precious resource, how we ensure that everyone has access to this and how we ensure that future generations can also shout "Viva water pure and clean."

This paper looks at aspects of the National Water Policy and National Water Act and how the goals of efficiency, equity and sustainability can be achieved.

2. Policy and legal context

The far-reaching political and social changes that swept across South Africa during the early 1990s only added to the tension caused by the chasm between outdated policy and the realities of resource management. With time it had become very clear that the approaches of the 1956 Water Act, that of water resource development and riparian rights, were not sufficient to meet the rapidly changing political, social, and economic environments. Furthermore, our understanding of the importance of ecological integrity and the role this plays in maintaining resource quality demanded new approaches. It was therefore, high time for policy and legislation that was integrative, flexible and more dynamic.

The White Paper on National Water Policy (DWAF, 1997) set out new integrated policy positions for protection, use, development, conservation, management and control of South Africa's water resources. It did this in plain English and explained how this would be implemented. This remains a remarkable document.

The National Water Act is often described as an "enabling" piece of legislation. It provides little in the way of regulatory procedures, standards and tools which will be used for the integrated approaches that were emphasised in the National Water Policy. The strength of this approach is that it enables the flexibility that is required in regulating a dynamic world.

The framework for the integrated management of water resources is provided in the National Water Act via water resources strategies.

3. Water resource strategies

The National Water Act provides a two-tier approach to the development of strategies to facilitate the management of water resources.

At the national level, the Act provides for the Minister to progressively develop a National Water Resource Strategy (NWRS). This strategy must set out the objectives, plans, guidelines and procedures of the Minister and institutional arrangements relating to the protection, use, development, conservation, management and control of water resources. The NWRS provides the framework within which water will be managed at regional or catchment levels, in 19 defined Water Management Areas (WMA) that were established in October 1999. It provides this framework as follows:

The ecological component, via:

- the Reserve (the water required to maintain ecological sustainability);
- setting out of water conservation and water demand management principles; and
- stating objectives for water quality to be achieved.

The social and economic component, via:

- the Reserve (the water required for basic human needs);
- international rights and obligations;
- estimates of present and future water requirements;
- stating WMA surpluses and deficits;
- stating the quantity of water available in each WMA; and
- providing for inter-catchment transfers.

Integrated management, via:

- objectives for the establishment of institutions;
- determination of the inter-relationships between institutions involved in water resource management; and
- promoting the management of catchments in a holistic and integrated manner.

At a regional level, the NWA provides for the progressive development of Catchment Management Strategies. The Catchment Management Strategy (CMS) must be in harmony with the NWRS and in developing the CMS, the co-operation and agreement of stakeholders and interested persons must be sought with regard to water related matters.

The CMS must set out the strategies, objectives, plans, guidelines and procedures for the protection, use, development, conservation, management and control of water resources in the WMA. As with the NWRS, the CMS also addresses the ecological, social and economic imperatives as well as making provision for integrated approaches, as follows.

The ecological imperatives, via:

- the class of the water resources, the resource quality objectives and the requirements of the Reserve; and
- taking into account the geology, climate and vegetation.

The social and economic imperatives, via:

- considering international obligations;
- taking into account demography, land use and waterworks;
- water allocation plans; and

- taking into consideration the needs and expectations of existing and potential water users.

Integrated management, via:

- taking into account any relevant national or regional plans prepared in terms of any other law;
- enabling the public to participate in managing water resources; and
- setting out the institutions to be established.

Often, when these strategies are discussed, it is said that they can be summarised as working towards equity, efficiency and sustainability. In a complex way the various components do. But, to try and make the picture simpler, these strategies are about finding a balance between socio-ecological needs for resource protection and socio-economic needs for resource development and utilisation, by involving stakeholders via various institutional arrangements.

4. Water management institutions

The National Water Act provides for the establishment of a variety of water management institutions. The aim of establishing these institutions is to delegate water resources management to more regional and localised levels, to involve stakeholders in water resources management and thereby give effect to integrated water resources management.

4.1 Catchment Management Agencies

These agencies will be established progressively throughout the country, within the Water Management Areas defined by the National Water Resource Strategy. Whilst certain water resource management functions may be assigned or delegated to these agencies, there are initial functions that all Catchment Management Agencies must perform upon establishment. These include, amongst others:

- Playing a co-ordinating role regarding water-related activities and water management institutions;
- Developing and implementing a Catchment Management Strategy;
- Encouraging public participation.

A range of organisational models for these agencies will be required to suit the differing needs of the various Water Management Areas. Furthermore, the organisational structure will depend largely on the functions that are assigned or delegated to it. Certainly, the structure will need to be sustainable in terms of both human and financial resources. The aim is for Catchment Management Agencies is to be focussed and responsive and not to be bureaucratic hurdles.

The Governing Board of the Catchment Management Agency will be accountable to the Minister for the Agency's performance, and will be primarily responsible for setting the vision, mission and strategic direction. This Board will reflect the relevant sectoral, demographic and gender profiles, as well as possess the appropriate expertise and experience.

The Governing Board will ultimately be responsible for implementing the Catchment Management Strategy. Therefore, this Board will be responsible for ensuring that the balance between socio-ecological protection and socio-economic development is maintained in the Water Management Area. This will mean that the Governing Board will have to ensure, via the staff of the Catchment Management Agency, that stakeholders have their say with regard to resource protection and resource development and that the strategy reflects their needs and requirements.

4.2 Catchment Management Committees

The National Water Act provides specifically for the establishment of committees by the Catchment Management Agency "to perform any of its functions within a particular area or to advise it." It also provides for powers to be delegated to Committees. Catchment Management Committees provide an important means by which Catchment Management Agencies can broaden their management and technical capacity. They also provide a mechanism through which a broader range of stakeholders can be included in water resource management.

4.3 Water User Associations

A Water User Association (WUA) is a statutory body established by the Minister in terms of the National Water Act. WUAs are, in effect, co-operative associations of individual water users who wish to undertake water-related activities for their mutual benefit.

The broad role of a WUA is to enable people within a community to pool their resources (money, person-power and expertise) to carry out water-related activities more effectively. The establishment of a WUA must also assist in achieving the purposes of the Act. WUAs, firstly, enable members to benefit from addressing local needs in terms of local priorities and resources. Secondly, they provide a mechanism through which a CMA (or the Minister) can devolve the implementation of aspects of the Catchment Management Strategy to the local level.

WUAs will normally operate at a localised level. However there will be exceptions, such as when the length of a river managed by a WUA is so long that it relates more to a regional than a local interest. A WUA may be concerned with a single purpose, such as controlling recreational activities on a river or providing water for emerging farmers. Alternatively, a WUA may be multi-sectoral, dealing with a variety of water uses within its area of operation. WUAs may derive their functions through a process of delegation from the Minister or the CMA. The WUA is accountable, for exercising a delegated function, to whoever gave the specific delegation.

The DWAF has for some time been busy with a process of transforming Irrigation Boards which, constituted under the auspices of the 1956 Water Act, were essentially exclusive in their nature. Typically, these Boards did not include the participation of previously disadvantaged groups in the management of the water resources, and also had limited human and financial support. The transformation and establishment of these WUAs with regard to the participation of previously disadvantaged groups have certain constraints and difficulties that need to be overcome. One of many issues that need to addressed is ensuring that the historically disadvantaged become empowered sufficiently to have their say and not be overpowered by those who are economically stronger. Much is to be done, also, in bringing people together so as to learn and understand each other's needs and requirements. It is strongly believed that institutions such as WUAs can play an important role in ensuring that water resource management becomes more integrated.

4.4 Institutional linkages

Naturally one of the questions that arises when looking at these various Water Management Institutions is, how do they relate to each other and who is responsible for what? For sound, and maybe obvious, reasons the relationship between a CMA and DWAF is likely to be a very close one. DWAF is responsible for the development and implementation of the National Water Resources Strategy, whereas the CMA will be responsible for the development and implementation of the CMS within its Water Management Area. The Minister is ultimately accountable for the management of the nation's water resource. He or she must therefore ensure that CMAs carry out their functions effectively.

A WUA, together with other water management institutions and water services institutions, will be responsible for executing the Catchment Management Strategy at a local level.

Therefore, the establishment of these water management institutions will provide a more effective conduit for stakeholders to voice their needs and requirements for socio-ecological protection and socio-economic development.

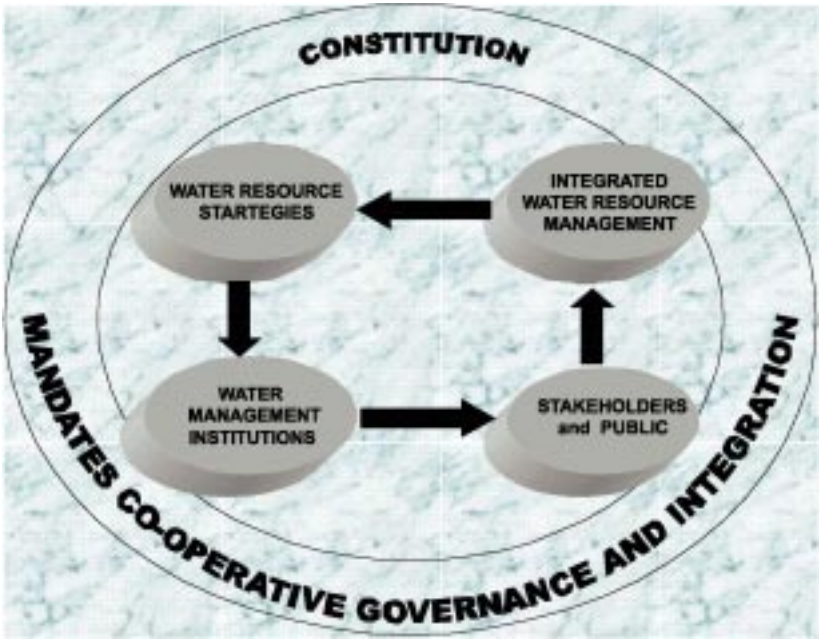
5. Co-operative governance and public participation—a road to sustainability

CMAs will manage activities impacting on the water resources of their WMA. In doing so they will have to actively work with these various water management institutions as well as other national departments, provincial and local government, non-governmental organisations and so on. Co-operative governance will have to be the order of the day to enable successful integrated water resource management.

The various dimensions of integration present an exciting challenge to water management institutions as South Africa's environmental, water and land-use legislation and administration is typically characterised by fragmentation (Görgens et al, 1998). However, the Constitution provides that all spheres of government and all organs of the state must co-operate with each other in mutual trust and good faith by co-ordinating their actions and legislation with each other (DWAF, 1997).

Therefore, co-operative governance is not only a policy matter, it is in fact constitutionally mandated (see Figure 1).

Figure 1: The constitution mandates co-operative governance and integration, and this is carried through into the National Water Act



Dent (2000) made the pertinent observation that successful integrated water resource management will require interaction between individuals, organisations and disciplines, thereby enabling the collective, timeous, wise and cost-effective assessment of proposed, present and past actions. Therefore, integration is also about interaction and therefore, the need for co-operative governance and public participation is carried through to the NWA via the water resource strategies.

The NWA provides a number of legal requirements for public participation in a number of sections throughout the Act. Words often used include: *co-operation and agreement; public to participate; consult with any persons or organisation; co-operation and consensus;* and *community participation.* However, despite the legislative requirement, integrated water resource management will not be achieved without public participation and, therefore, it should not be seen as regulatory "add-ons". This is supported by Jendroska (1998) who contends that

> *"public control, enhanced by transparency, is not only considered important; it is, in relative terms, the least expensive of all instruments for implementing environmental policies and enforcing environmental legislation."*

Water resource issues are complex and large amounts of technical information are often required to assist the process. Further, due to the complexity of issues many stakeholders are typically involved. Some of these stakeholders are lay people, some are experts. Often these people see things very differently. Certainly the public participation and stakeholder involvement processes have to take into account these dynamics (DWAF, 2000). The processes may be awkward, time-consuming and expensive, but Behr (1999) noted that without exception all models indicate that involving stakeholders achieves greater consensus about methods for appropriately managing the environment. He went on to note that the success of these processes depends on identifying stakeholders, involving them in informational and decision-making processes, and ultimately implementing programmes in co-operation with community groups.

However, the responsibility for the success of this approach does not just lie at the door of central government. Zazueta (1995) pointed out that civil society also has a responsibility and that it needs to move beyond the paradigm of criticising government action, or inaction, and build its own capacities to propose viable options that address the problems they articulate. They must also learn how to work together better to generate a broader range of choices and options for people to assess as participatory democracies evolve.

It is, therefore, the policy of the Department of Water Affairs and Forestry to strive for integrated water resource management arm-in-arm with its stakeholders; both aware of each other's importance. For without each other we will not be able to ensure that our water resources are managed in a manner that is sustainable, both in terms of the environment and of process. If we ensure that the sustainability of the resource is ensured by means of Resource Quality Objectives, and if we ensure that the approaches of involving stakeholders in water resource management are also sustainable, then as a "team" we can work towards ensuring that the allocatable water resources of South Africa are used equitably and efficiently.

Bibliography

Behr, G.S. 1999. Public participation in environmental management: access to information, consultation, and decision making. Duke Law School International Development Clinic. Working Paper Series.

Dent, M.C. 2000. Personal communication.

DWAF. 1997. White Paper on a National Water Policy for South Africa. Department of Water Affairs and Forestry, Pretoria, South Africa.

DWAF. 2000. CMA and WUA Guide Series. Guide 4: Public participation for Catchment Management Agencies and Water User Associations. Reports in Preparation. Department of Water Affairs and Forestry, Pretoria, South Africa.

Görgens, A.; G. Pegram; M. Uys; A. Grobicki; L. Loots; A. Tanner; and R. Bengu. 1998. Guidelines for catchment management to achieve integrated water resources management in South Africa. Water Research Commission Report No. KV 108/98. Pretoria, South Africa.

Jendroska, J. 1998. UNECE Convention on Access to Information, Public Participation in Decision Making, and Access to Justice in Environmental Matters: Towards more effective public involvement in monitoring compliance and enforcement in Europe, 13 No. 6 NAAG Nat'l. Envtl. Enforcement J32.

MacKay, H. 2000. Moving towards sustainability: The ecological Reserve and its role in implementation of South Africa's water policy. Draft document for World Bank Water Week Conference, April 2000.

Zazueta, A.E. 1995. Policy hits the ground: participation and equity in environmental policy making. World Resources Institute.

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 Minster 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)

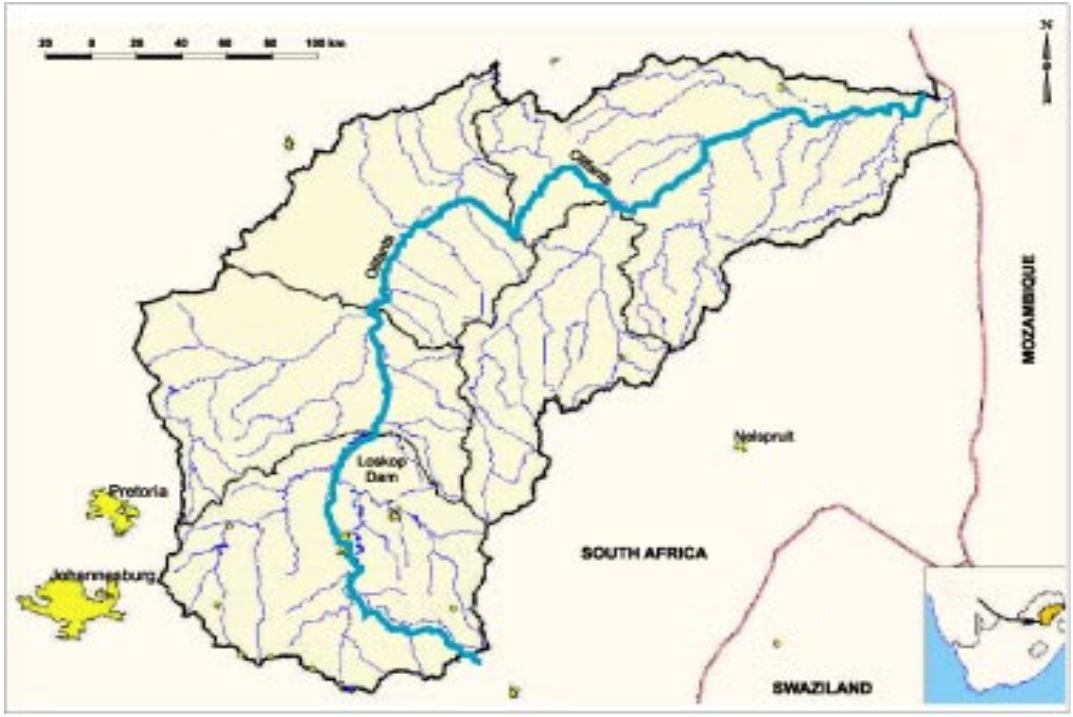
Principle 22:	The institutional framework for water management shall as far as possible be simple, pragmatic and understandable. It shall be self-driven and minimise the necessity for state intervention. Administrative decisions shall be subject to appeal.
Principle 23:	Responsibility for the development, 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).

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

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

Figure 2 : Map of the Olifants River Basin



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 (Kruger 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).

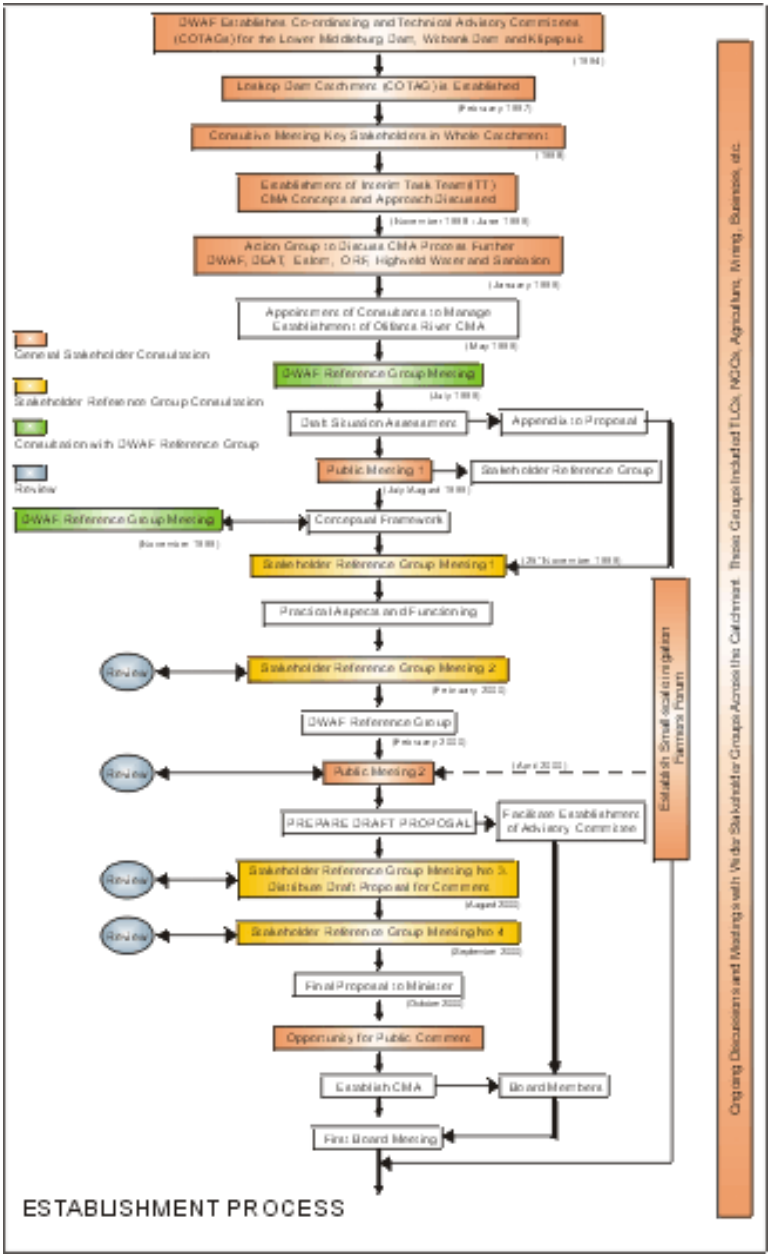
The whole process is shown in Figure 3.

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 were11 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^2
- it has a population of about 3,400,000
- it had a water demand of –

- 1,135.2 million m^3 per annum in 1995 and
- 1, 375.2 million m^3 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.

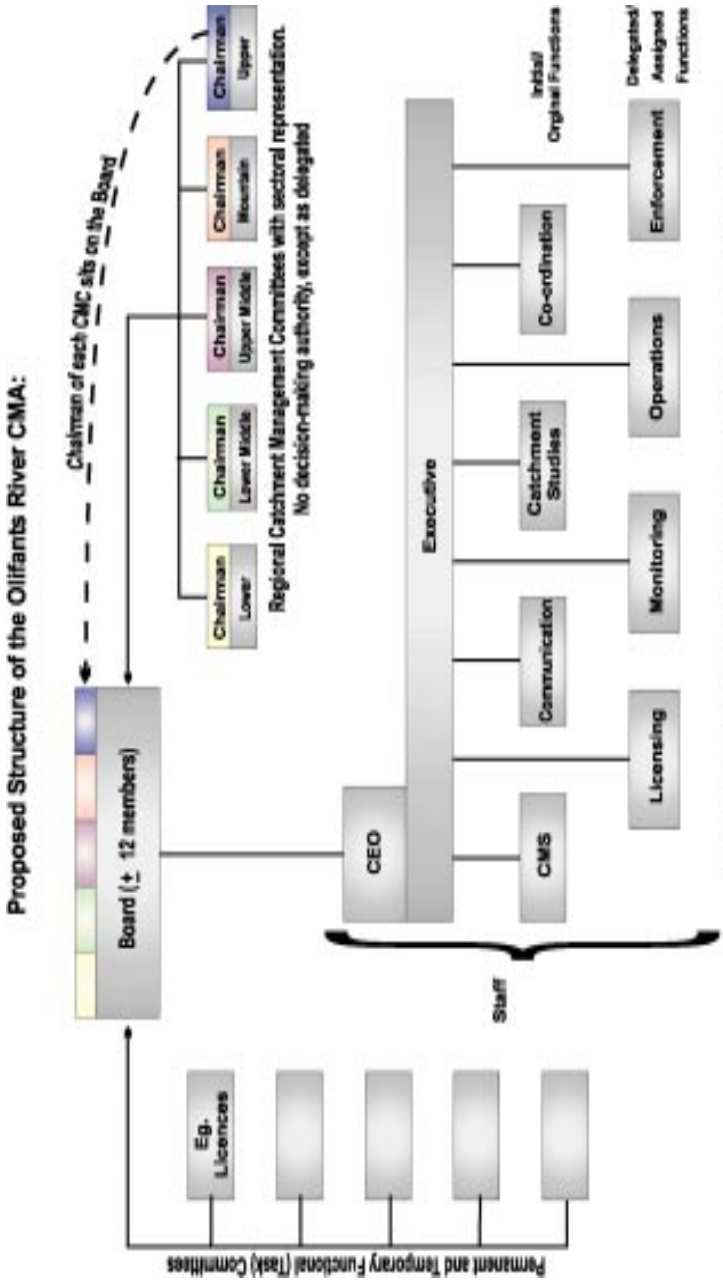
Box 10: Classification of water resources and resource quality objectives (NWA, Chapter 3 part 2)

…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.

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:


Proposed Structure of the Olifants River CMA:
Chairman of each CMC sits on the Board
Board (+ 12 members)
Chairman Lower
Chairman Lower Middle
Chairman Upper Middle
Chairman Mountain
Chairman Upper
Regional Catchment Management Committees with sectoral representation.
No decision-making authority, except as delegated
CEO
Executive
Staff
CMS
Communication
Licensing
Monitoring
Catchment Studies
Operations
Co-ordination
Enforcement
Initial/ Original Functions
Delegated/ Assigned Functions
Eg. Licences
Permanent and Temporary Functional (Task) Committees
ESTABLISHMENT PROPOSED STRUCTURE
OF THE OLIFANTS CMA

- 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^3	0.83 c/m^3	0.54 c/m^3	0.49 c/m^3

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.

Bibliography

Department of Water Affairs and Forestry. 1997. White paper on a National Water Policy for South Africa. Appendix 1. Fundamental Principles and Objectives for a New Water Law for South Africa.

Department of Water Affairs and Forestry. 2000. Proposal for the establishment of a Catchment Management Agency for the Olifants Water Management Area. First draft, July.

Department of Water Affairs and Forestry. 2001. Development of a generic framework for a catchment management strategy. Final draft, January.

Government of South Africa. 1999. Establishment of a Pricing Strategy for water use charges in terms of section 56(1) of the National Water Act, 1998. Government Gazette 20615, No. 1353. 12 November 1999.

Republic of South Africa. 1998. National Water Act, Act No 36 of 1998.

From Bucket to Basin: Poverty, Gender, and Integrated Water Management in South Africa

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Abstract

Based on the South African experience of integrated water management under the new dispensation since 1994, this paper proposes a new paradigm for water management. Rather than as an end in itself, water management is seen as a means to eradicate poverty, foster gender equity, preserve the resource base and, thus, achieve social and environmental justice. This paradigm is rooted in the strong linkages between water, poverty, and gender. Satisfying poor women's and men's unmet water needs for domestic and productive uses, while enhancing the productivity of water used by poor men and women, is its primary aim. The far-reaching implications of the new paradigm are traced for mainstream policies and tools in the economic domain (water valuation and pricing), the legal domain (state's custody and legislation), and the governance domain (users' participation within basin boundaries). It is shown that policies proposed in international forums as blanket measures, 'equally' applicable in the North and South, for the poor and non-poor, and for men and women, are bound to aggravate poverty and widen race and gender gaps, especially under growing competition for water. Instead, the analysis of both failures and early positive experiences in South Africa and elsewhere indicate the directions for pro-poor and gender-inclusive economic, legal and governance policies and tools, and the need for strong synergy with efforts to eradicate poverty beyond the government and beyond the water sector.

1. Introduction

A new water management paradigm

Water management is not an end in itself, but a means to eradicate poverty, guarantee basic human rights to all, ensure gender equity, and preserve the natural resource base for future generations. The primary objective of water management is to contribute to the transformation of society towards social and environmental justice.

This statement reflects the policies of the government of South Africa and of an increasing number of governmental and non-governmental water and development institutions today. However, the implications of this policy statement, especially under

growing water scarcity, are hardly recognised as yet: it implies a paradigm shift in water management. This new paradigm is discussed in this paper, based on experiences in South Africa, a water-scarce country in which, in a sense, the North and South co-exist in one nation, and social inequities along race, class and gender lines are strong.

In the new paradigm, poor people's water needs for multiple purposes are the starting point. Conforming to the needs and aspirations of poor women and men themselves, action is taken from local to national and basin level to improve their access to water and their well-being. The interests of people who still have to carry buckets to supply water to their homes or tiny plots for sub-minimal welfare are at the centre stage of integrated water management at basin level. In the new water management paradigm, social divides along race, class and gender lines are key determinants, and more relevant than analysis according to 'sectors', or any other entity that insufficiently highlights poverty and heterogeneity within the entity. Sections two and three give a sketch of the role of water in poverty eradication under growing competition for water.

The later sections of the paper highlight the far-reaching implications of the new paradigm for a wide range of policies and intervention tools that are currently debated both in the international forums and in South Africa to address increasing competition over water. These measures encompass economic tools (water valuation and pricing), legal tools (the state as custodian and legislator) and governance issues (user participation and basin-level management institutions). Many professionals in the international community and donor agencies still assume that there would be best single blanket measures applicable in the North and South alike. Just some mitigating "extra subsidies" or "special consideration" or "postponed phasing in" for the disadvantaged would sufficiently address poverty and gender issues of the South. The analysis in this paper, however, shows the opposite.

The inescapable conclusion, for each of the mainstream economic, legal, and governance policies and intervention tools, is that the proposed measures are often entirely inadequate and may, in fact, aggravate poverty. In order to avoid negative impacts on poor women and men and achieve positive ones, such blanket policies are to be dismissed, thoroughly revised or nuanced. Moreover, if poverty eradication is the ultimate aim, synergy needs to be sought with other governmental and non-governmental endeavours within and outside the water sector, such as agricultural markets, that also aim to eradicate poverty, because water is often only one of the inputs in an income-generating activity like irrigated agriculture. Thus, this paper looks for a consistent and mutually reinforcing blend of multi-objective water management policies and other policies, in which meeting poor women's and men's water-related basic needs for consumption and production have absolute priority.

2. Linkages between water scarcity, poverty, and gender

2.1. Poverty

Water scarcity, poverty, and deprivation

A closer look at the linkages between water and poverty shows that the lack of access to water to meet multi-faceted basic needs is intrinsic to poverty. For poor people water is so scarce that even basic human needs, for which water is needed, such as health and incomes, are not met. Moreover, poor people's costs for water are often exorbitantly high either as drudgery of fetching water, especially for rural poor women, or as high purchase prices from vendors in areas where the subsidised piped systems do not reach. So, if water scarcity, or water deprivation, is defined as the extent to which human needs for water remain unmet, poor people suffer most from water scarcity. Water deprivation is an intrinsic dimension of the general state of deprivation that poverty is.

The primary cause of water scarcity for the poor is their lack of assets to access the available water resources, even when water resources are abundant. If, moreover, all available water resources are developed and committed and "water scarcity", as usually defined by technical people, exists, a second cause of poor people's water deprivation is added: non-poor competitors with stronger bargaining positions and more money to pay for water may directly deprive poor people of the water they already use. Any future access to water to meet their still unmet needs will be forfeited forever. Even under extreme "water scarcity" or competition the better-off still use large quantities of water for secure and comfortable living and incomes. Hence, under competition, poor people tend to suffer double, both from asset-related and competition-related water scarcity.

Multi-faceted needs

The human needs for which water is needed are multi-faceted, and so are poor people's needs that are still unmet. This is most straightforward for health, income, and lack of drudgery. All general definitions of poverty encompass lack of access to near and safe drinking water and sanitation, and its negative health impacts. In South Africa this form of poverty is extensive. Twelve million South Africans still lack adequate facilities for domestic water, especially in the rural areas of former homelands where the majority of South Africa's poor black people are concentrated.

Lack of income is the core component of poverty as it is commonly defined. What is often not acknowledged is that water is vital to increase incomes above one US dollar per day. This is especially the case for rural areas where water is indispensable for agriculture, livestock, forestry, fishery, and small industries. Rural employment is important in South Africa, where the majority of the poor are rural and where the rural population is expected to continue to increase (May 2000). One of the reasons is that people are reportedly returning to the rural areas because of growing off-farm unemployment.

Elsewhere, better access to irrigation infrastructure and water has proven to be a powerful means for income improvement among the poor in semi-arid or arid areas with high rainfall variability, by enhancing yields during a longer period of the year and at lesser risk. But in order to realise the potential of income generation, a range of other factors that hamper poor smallholders from using water productively, must be taken into account as well. Poor farmers in South Africa, the majority of whom are women, lack access to markets, inputs, training, and seasonal credits. Moreover, although irrigation-induced intensification of agriculture can have considerable income impacts on even the smallest plot, it is evident that access to more land helps better to escape poverty. The land distribution in South Africa is the second most skewed in the world, after Brazil. The slow implementation of land redistribution also hampers the adoption of irrigated agriculture and poverty eradication (Cousins 2000). Collaboration with other government departments, NGOs and private institutions beyond the water sector is clearly needed.

Competition

Under growing competition, when all available water resources in a (micro-)basin are developed and committed, water easily becomes even more scarce for poor people. Competition in several of South Africa's basins, such as the Olifants and Inkomati Basins, is growing rapidly. Poorer water users, such as the black emerging farmers in the Nkomati Basin, have limited negotiation power vis-à-vis the white large-scale farmers with whom they compete (Woodhouse and Hassan 1999). Poor people's bargaining position with mines and industries is weak as well. In the congested former homelands, the competition for scarce water resources is between smallholders and other water users, as in the Tongwane micro-basin in Mathabathaland, Northern Province (Van Koppen, Joubert and Grobbelaar forthcoming). Increasing competition not only affects current users, but also inhibits potential new entrants from even considering new investments in water infrastructure. If water management is to contribute to poverty eradication under direct competition for water, new rules and practices are needed in which former use, which is very unequal, ceases to be the main criterion for continuing use in the future.

2.2 Gender

Gender inequities in the domestic water sector

Water deprivation affects poor women more strongly than poor men. Widespread global gender inequities—men dominating the productive and political spheres, relegating low-paid jobs and unpaid domestic chores to women (UNDP 1995)—are reflected in water management policy and intervention[1].

[1]Gender-sensitive water management is neither "natural" expertise nor the sole responsibility of women professionals. Being female does not, in and of itself imply an understanding of or a commitment to gender transformation—indeed there are men who are more committed to this process than some of their female counterparts. The skewed gender composition in the staff of water institutions is another issue, but not further elaborated here. We focus on the interface between gender and poverty.

The invisibility of women's work in domestic water provision is part and parcel of the general invisibility of unpaid domestic labour, across all classes, even though it represents a market value of up to 70 percent of the total global output (UNDP 1995). Or, in daily life:

> *The men do not know how clothes are washed. They just see the clean clothes and that is good enough for them* (Sinah Thibedi, pers. communication 1999)

Poverty critically impinges on women's workload in drinking water supply. Water has never been a "free good" for poor women. Whereas the health aspects of improved drinking water supply and sanitation are well articulated at policy levels, the need to liberate poor women from this drudgery is still underestimated. Related to this, the status of the "female" domestic water supply sector as a whole is still lower than that of the "male" productive water sector.

The burdens of the responsibility to provide the family with water often fall disproportionately on women. This is illustrated in a study in South Africa, in which paying an apparently meagre US$ 1.60 per month for water has resulted in the women having that much less money to spend on food for themselves and their children, while their husbands maintain their drinking and smoking allowances of about US$ 8 per month—allowances which the women dare not ask to be reduced for fear, inter alia, of being beaten.

Emphasising poor women's heavy burden in domestic water supply is not to deny men's contributions to this essential component of family welfare. Across the developing world, several studies report a gender division in domestic water supply, in which men take the responsibility for most of the construction work of village wells, ponds, or tanks and also dominate their management, while women are responsible to ensure daily supply from the water source to the house[2].

Redressing gender inequities in the long-term would imply that water supply for household welfare becomes less drudgery and that both men and women contribute equally and share responsibilities for its provision. At community level, then, women and men would also contribute more equally to the management of water supply schemes. As women and men perform different tasks, they bring different

[2]Gender divisions may also diverge from this rather stereotypical picture, as is the case in slightly better-off households in cultures where women's mobility is restrained. For example, in Morocco's gravity irrigation schemes, men are the main ones responsible for fetching water from larger distances for family use; both girls and boys perform much work in fetching water as well. Another example is in the Punjab in Pakistan where men are responsible for bringing water from far during the annual period of canal closure for maintenance, when the wide range of canal water uses are stopped. Whatever the arrangements, these gender relations are not static or 'nature'-given but negotiated between the genders. In West Burkina Faso, for example, women refuse to marry into villages where the drinking water wells are inadequate. Elsewhere in Burkina Faso, among the Gourounsi, women are supposed to bring water for homesteads for free, but men pay when the women bring water to the fields where they are cultivating.

perspectives. For instance, women in a drought-prone part of Gujarat, India, insisted on a collective tap instead of connections in the homesteads, as the men had proposed. The reasoning was that a collective tap would enable them to keep a much better eye on the quantities that each of them used and, thus, on a fair distribution (Barot, personal communication). In this way, women's better inclusion in planning of drinking water schemes from the start onwards has proven to lead to better schemes (UNDP 1999).

Hence, domestic water supply policy and intervention entail two challenges for "social transformation" (Khumbane, personal communication): lessening or abolishing unpaid work loads, which are now mainly borne by women, and fostering gender equality in the provision of water for family welfare from household level to community and basin level.

Gender inequities in the productive water sector

The challenge of redressing gender inequities in the productive water sector is to improve incomes of both women and men, rather than continuing to ignore women's income needs. Outside the water sector, the need to improve especially poor women's incomes is now widely recognised and justified for the following reasons. Among the poor, the incomes of both men and women are required to meet basic family needs. If in male-headed households women and men are responsible for different household needs, both types of needs must be met. Women's incomes, however, benefit the family relatively more than men's because, reportedly, women spend a higher proportion of their incomes on family expenditures than men do (Agarwal 1994). In female-headed households, women's incomes are usually the major source of income. A last reason for making poor women's independent economic security a priority, is that women's own economic security is the crucial factor at the micro-level that explains a reduction in fertility rates at the macro-level (Safiliou 1986).

In the case of irrigation, the focus of this paper, women's needs as producers were systematically ignored. The allocation of newly developed irrigated land and water, accompanying agricultural inputs, training and marketing services has almost exclusively been to men, as criticised over a long period (Hanger and Morris 1973). Irrigation interventionists even seriously eroded women's existing land rights, productive capacities, and incomes by communicating and negotiating only with men, especially the male village elite (Dey 1980; Carney 1988; Van Koppen 1990, 1998). Men also continue to be the privileged members of Water Users' Associations and particularly dominate in decision-making committees (Chancellor 1996). Even if women are committee members, this does not necessarily guarantee that they have any say. Male committee members reportedly gave women's names as committee members, without the women themselves even knowing[3], to please an external agency, politician, or donor to get more money.

[3]Reported in Water Users Associations in Nepal (Van Etten et al. 1999) and Andhra Pradesh, India (1999).

Irrigation planners still rarely consider women as being independent farm decision-makers who manage the production process, and control the output, and who, therefore, are the ones primarily interested in improving the productivity of their enterprise through irrigation. This is based on the stereotypical assumption that a whole family is engaged in farming, with the male household head as the manager and representative. In reality, however, farm households often diversify incomes and encompass several production sub-units within a household, with specialisation along gender and age lines. Male- and female-managed cropping units co-exist, especially in many ethnic communities in Sub-Saharan Africa. In areas with remunerative off-farm employment opportunities for men, farming often becomes the full-time activity of women. Then, farming does not provide one family income, but the income for one of its specialising adults (Safiliou 1988).

The assumption that only landowners are farmers also contributes to women's invisibility as farmers. In the irrigation sector, this is reflected in the tendency to vest water rights in the one with the strongest land titles rather than in the farm decision-maker and factual irrigator. This excludes all women farmers who cultivate land of their husband's family and have life-long tenure security to that land, but without owning it. In this respect, the South African National Water Act is unique in providing scope to vest water rights and membership in the factual water user, irrespective of his or her type of land rights.

A study in South Africa that debunks the myth that women are just helping their husbands, rather than being farm decision-makers in their own right, was done in the Tongwane catchment in Northern Province. It was found that, out of 176 households with plots in state-supported and self-initiated irrigation schemes in this basin, women are the farm decision-makers on 62 percent of the irrigated plots, and in another 14 percent they decide jointly with their husbands. The proportion of women managers is highest in the government schemes, where women decide alone or jointly with their husbands in 88 percent of the households. The lower proportion of women in the informal schemes is due to the fact that these schemes were recently started under the leadership of some men who lost their jobs in a nearby mine. The study also found that among women decision-makers, land was registered in their husbands' names in 36 percent of the cases. Among male farm decision-makers, 10 percent cultivated land registered in the names of their female kin. Overall, if in these schemes formal membership criteria were to be based upon land titles, 28 percent of the farm managers would be excluded (Van Koppen, Joubert, and Grobbelaar forthcoming). Similar results are found in other studies in Southern and Eastern African countries (Makhura and Ngqaleni 1996; FAO 1998; Safiliou 1985, 1994). These findings corroborate the need to develop irrigation and other support systems not only for men but also directly for women farmers.

In cases in which both men and women farm on their own account, gender-sensitive measures, such as fostering full representation in meetings and committees, reportedly led to women's positive responses, men's general acceptance, and thus broader farmers' support for scheme affairs. The impact of the policy change by the Provincial Irrigation Unit in the Nyanza Province, Kenya, is a well-documented example (Hulsebosch and Ombarra 1995). Traditional chiefs and agricultural extension workers in Northern Province, South Africa also favour women farmers'

stronger land rights. Giving women their own land rights would better motivate them to increase productivity, as it would protect them against men's appropriation of the fruits of their labour (Van Koppen 1999).

Women's independent position as members and their representative inclusion in committees will also be crucial for the formal establishment of small-holder Water Users' Associations and women's participation in higher-level water management bodies like the Catchment Management Agencies in South Africa.

Conclusion

In sum, a pro-poor and gender-sensitive (or people-sensitive) integrated water sector gives absolute priority to meeting poor women's and men's water needs for domestic and productive uses. Further, it transcends the current boundaries between "male" and "female" domains by attaching equal importance to domestic and productive water uses, and by overcoming the artificial institutional separation and split in mindsets between water management for "men as producers" versus "women as housewives."

As for any other policy, the policy of managing water to eradicate water deprivation among men and women requires clear definition and quantification. Goal-setting would specify the numbers of poor men and women affected and the dimensions of well-being, such as incidence of water-related disease, hours spent on drudgery or absolute and relative amounts of money spent on water, and water-related incomes gained through, for example, irrigated agriculture. Unambiguous quantified goals also allow monitoring and evaluation of progress and the assessment and comparison of the impact of different public and private measures.

Eradicating water deprivation is the challenge for the water sector. The reality that competition for water is growing cannot become another fate against the poor. On the contrary, it brings the urgency to address poor people's water needs first even more strongly to the forefront. It implies that economic, legal and governance tools that are currently proposed in mainstream international forums need to be dismissed or fundamentally revised, as argued in the remaining sections.

3. Water allocation to poor women and men: economic tools

3.1 Valuing water as an economic good

Water as an economic good

The recognition that water is an increasingly scarce good has contributed to a widespread agreement that water should be treated as an economic good. Economic analysis is more and more seen as a "rational" and "objective" tool to orient water allocation under growing scarcity. However, this statement that "water is an economic good" has "the virtue of being sufficiently vague to allow agreement, while leaving the implied operational content—over which there may be strong disagreement—unstated" (Perry et al. 1997). Three aspects of the common interpretation of this

statement are especially contentious in the light of the new water management paradigm that aims to combat poverty. First, "value" is often interpreted in a very narrow sense and based on an assumption that all people are sufficiently able to pay for water. Second, only goods that are exchanged on the monetary market and the single main use of water tend to be considered. And third, the crucial question "benefits for whom" and the distribution of wealth within society are ignored. The implications for pricing policies will be discussed in section 3.2.

Which value reigns?

In the discussion on "water as an economic good", Perry et al. (1997) argue that the issue is not whether water is an economic good, as it is, but what kind of economic good water is, a private or public and social good, and hence which values govern analysis and decision-making. Proponents of water as a private good define its value as the maximum amount that the user would be willing to pay for the use of the resource. The distribution of water should be determined by the overriding value (and not more than a value) of the consumer's sovereignty on a free market. However, their opponents find this a misleading analysis: it does not take into account that willingness to pay depends largely on ability to pay and it ignores the unequal distribution of incomes (Perry et al. 1997). Thus, valuing consumer sovereignty is incompatible with another widely endorsed value of a society, in which all people's basic needs are met, including the basic consumptive and productive needs in which water plays a role.

Valuing consumer sovereignty as primary allocation principle may make sense in Northern countries, where the ability to pay is generally sufficient to meet basic needs, but not in the South where poverty and the lack of assets to access water are still rampant. If poverty eradication is the primary goal, all water used to that end has by definition an infinite value. In fact, both the public-good and private-good adherents tend to agree on the importance of the value of poverty eradication for society. Whether private markets or public interventions, or a mix, are most effective in bringing about such a society is the question to explore.

Only single-purpose market values?

In many valuation studies, the costs, values and benefits of water tend to be narrowed down to the (opportunity) costs and gains of the main product that is exchanged on (male-dominated) monetary markets, such as irrigated crops or mining products. However, a more encompassing concept of costs, values and benefits would also include the huge benefits that are not exchanged on a market, and are often difficult to express in monetary terms. The most obvious of such impacts are the "soft-sector" health impacts of safe drinking water or unpolluted water for agricultural use. Another example is the cost of labour that is not exchanged on a market but within a household, as (female-dominated) fetching of household water is.

Further, the focus of water valuation tends to be only on the main purpose of a water source. However, one water source is often used for multiple purposes, so all uses of the water source should be counted, giving equal importance to the

"male" affair of productive water use and the "female" affair of domestic water use. The value of irrigation water, for example, becomes considerably higher if the use for livestock, fishing, homestead gardening, domestic purposes of that same water are included as well (Bakker et al 1999).

Valuing the multiple purposes of water both within and outside monetary markets has many practical applications. One application would be that new Water Users' Associations, which are world-wide still largely single-purpose Farmers' Associations focussing on irrigation, would open up to the many simple and no-cost or low-cost opportunities to broaden the ultimate benefits of investments in irrigation infrastructure for men and women. Also, many poor people, especially women, could get a much better deal if the development of mines, for example, as in parts of South Africa, is accompanied by additional benefits. Here the potential exists to issue licences to mines by negotiating strong added value for local poor people in a "quid pro quo" arrangement—the provision of water services from the new pipelines to the surrounding communities, the mine's commitment to purchase agricultural products from small-holders, micro-credit provision, training, etc.

Values and benefits for whom?

Perhaps the most serious flaw in mainstream water valuation is the tendency to focus on the value of water as such, as an abstract contribution to Gross National Product, without even considering the distribution of the created wealth within society. Distributive aspects are a critical part of any valuation study and absolutely crucial if water managers intend to redress social inequities and aim to alleviate poverty. In employment creation, for example, the crucial issue is for whom employment is created. The same volume of water, if allocated to a mine, may give employment for a handful of highly qualified staff (some may be expatriates) and a limited number of male workers. However, if used in a smallholder scheme with a majority of women farmers, it may contribute to the alleviation of income poverty among a much larger group of beneficiaries, even if it created only half of the overall monetary value. So any overall value per unit of water remains rather meaningless without the analysis of distribution along race, class and gender lines, or "jobs per drop for poor women and men." This over-arching social divide is valid across all water sectors and uses.

3.2 Water Pricing

Capital and operational costs of infrastructure

While water valuation is still a rather theoretical endeavour, the statement that "water should be treated as an economic good" already tangibly reinforced the privatisation waves in which governmental and non-governmental agencies stop subsidising capital and operational costs of water infrastructure, often under the euphemistic heading of "participatory water management." Higher payment by users is further assumed (rather than proven) to be an effective way to promote water savings. The South African government faces this issue as well. The Department of Water Affairs and Forestry (DWAF) discusses the introduction of one overall strategy for full cost recovery from all water users for water development and use and also, which is quite unique, for water resources management. The latter is currently carried

out by DWAF but in the long run intended to be delegated to Catchment Management Agencies (CMAs).

It is true that the huge subsidies in the past mainly benefited the large, non-poor water users. If water charges are proportional to volumetric water use, the larger consumers would pay considerably more than poor people who tend to be small water users. So better cost-recovery would lead better-off consumers to pay directly for services that were formerly financed from their taxes. Such pricing policies would free up considerable funds for the government. But whether governments would use these newly available funds for poverty eradication is another question.

It is also true that some private initiatives and public-private partnerships can better reach the poor than governmental and even NGO interventions. In fact, it is inherent to poverty that public interventions tend to fail in reaching this group. Small water-vendors are major suppliers of domestic water to the urban poor. Poor people in rural areas typically arrange their drinking water from wells or water management devices on their own. Competitive groundwater irrigation markets in India and Bangladesh provide good water service at competitive prices to even the poorest farmers. Much can be learned from such initiatives, about quality service provision and poor people's willingness to pay for good service. But it may be that other types or levels of subsidy, such as subsidies for bulk water supply or for rural electricity supply, have influenced these private initiatives, and are still needed in current or future infrastructure uses by poor people.

Generally speaking, pricing policies for cost-recovery of infrastructure development and operation applied as a blanket measure runs the serious risk of aggravating water deprivation and poverty. Sudden payment of high operational costs may cause some poor people to give up current water use. The creation of future new demands by poor people through subsidised new infrastructure development would be forfeited as well. Pushing poor people out of the water-business would be an ironic form of water conservation and demand management. Therefore, the South African government is embarking on a differentiated pricing strategy.

Domestic water use

When the democratic government of South Africa was elected in 1994 it immediately recognised access to drinking water as a basic right and identified the lack of subsidised infrastructure development as the main reason for the fact that more than 12 million South Africans were still deprived of near and safe drinking water supply. The government adopted a Water Services Act in 1997 and the National Water Act in 1998. The former provides the framework for the provision of water services to all, while the latter guarantees, through the provision of a reserve, that sufficient water to provide a minimum of 25 litres per person per day is set aside before water is allocated for other purposes. The costs for the first-tier infrastructure to provide for these 25 litres are subsidised by the government or cross-subsidised by well-off water users. For larger quantities, sliding tariffs are adopted. The option of individual vouchers, as sometimes recommended in global debates, is discarded as of little use for poor women, who have no supply system near their houses, nor

the contacts and organisational power to make the suppliers come. Massive implementation of new infrastructure development and stepped tariffs is underway.

The need to provide minimum levels of water supply for free was illustrated in a village in South Africa that was recently supplied with potable water but still for a fee. The Minister of Water Affairs and Forestry found a woman with a baby tied on her back, digging for water near the bank of a river. When asked why she was not using the water from the communal standpipe, her reply was that she could not afford the R10 required by the water committee to pay for the water. This example also highlights that South African women would bear the larger burdens of pricing of costs for the drinking water services for their families.

An important challenge is to develop sustainable forms of cross-subsidisation. The Durban Metropolitan Council is pioneering this approach. The town is sub-divided into four neighbourhoods, encompassing both poor and non-poor water users. Everybody, whether rich or poor, receives the first 25 litres per person free of charge. This cost is paid for by cross-subsidisation from higher levels of water use and the sliding tariff scale. This approach, coupled with other customer service improvements has also raised levels of payment for water, enabling the local authority to provide and maintain better levels of service.

Productive water use in agriculture

Withdrawal of state support and imposing even partial cost-recovery in irrigated agriculture, whether farmers are poor or not, has proven to be very negative for poor small-holders in South Africa. While impacts for better-off farmers were minimal if not positive, this policy aggravated poverty.

The introduction of cost-recovery has been quite smooth for the white, large-scale farmers, who occupy 95 percent of the irrigated land. In the past, these large-scale white farmers benefited from substantive state subsidies for capital investments and agricultural services. Farmers also had a strong voice in the design and operation of the scheme. While for a long time scheme operation and maintenance was subsidised, this started to be phased out in the mid-1990s. This was a well-prepared and transparent five-year process, in which farmers accepted the increases in their input costs. Further, in South Africa it is feasible to leave new capital investments to large-scale farmers because the private equipment that is now available on the shelves, such as pumps or high-tech sprinkler and drip irrigation systems, fits the needs of large-scale farming. Moreover, banks continue to provide agricultural loans to large farmers as they did in the past.

In contrast, black small-holders, who occupy the other five percent of irrigated land, suffered seriously from the general agricultural liberalisation policies of the 1990s, which included only partial cost-recovery for irrigation. If on top of this full cost-recovery at a par with the large-scale farmers is imposed, the effects are bound to be even worse.

Most small-holder irrigation schemes in the former homelands, and many other African countries as well, were designed and constructed for centralised state-

management and uniform cropping patterns, typically maize and wheat. The state used to deliver highly subsidised services for ploughing, credit and input provision, irrigation, and marketing. Farmers, although bearing the risks, were often no more than labourers on their own one- to two-hectare plots. The withdrawal of most subsidies and services such as electricity payment, ploughing, inputs, and credit services, and mediation in marketing for the state-managed smallholder schemes in the late 1990s came very abruptly, without guidance and training for gradual take-over. The question was also not addressed as to whether farmers' management of these schemes designed for highly subsidised, centralised state management is feasible at all. The impact of this partial abandonment of schemes has been extremely negative. Farmers' own market linkages are still weak, the costs for water in these inefficient schemes are relatively high, and inputs and credits are still lacking, so net profits from irrigated farming dramatically declined. Many poor farmers gave up irrigated farming and returned to rainfed agriculture. Schemes are increasingly in a dilapidated state. This effect is not only reported for South Africa's small-holder schemes in the former homelands, but is also observed in other irrigation schemes in sub-Saharan Africa (Shah et al. 2000).

Under these conditions, further withdrawal of the limited remaining subsidies for water bailiffs and for maintenance costs, let alone imposing charges for water resources management for national and basin-level management, will further diminish net gains or push more poor people out of the business of irrigated agriculture. As long as the "value per drop" is sub-optimal because input provision and marketing channels are lacking, concerted efforts with other agencies are needed to enhance the profitability of smallholder irrigated farming (Shah et al 2000). This should be a precondition for any further implementation of recovery of even operational costs.

Besides the state-managed smallholder schemes, the South African government and civic society also financed and constructed an unknown number of smaller community gardens, and continue to do so. These smaller schemes, designed for self-management, are generally easier to operate and manage by farmers themselves, although they remain dependent on external support for major rehabilitation or replacement of infrastructure. But in these schemes as well, lack of markets is the most general complaint. Although the output per unit of land or per unit of water on, for example, intensively cultivated micro-plots of poor women is considerably higher than on large-scale cereal farms, the real profits that can be realised are still relatively low as a result of lack of access to markets. So for these schemes as well, stopping external support for major rehabilitation and replacement would mean the collapse of the scheme as long as the net profits are not sufficiently high for farmers to provide for such costs. Bringing poor farmers in upward ratchets of profitable farming is equally important for them.

In answer to these realities, the Department of Water Affairs and Forestry is now actively collaborating with other government and non-government agencies to address this key issue of the profitability of small-holder irrigated farming, and the issue of rural loan facilities. Moreover, subsidies for new scheme construction and for the upgrading of formerly state-supported schemes are made available, although the information about these subsidies is still not known widely enough. In the future, water charges may be minimised by introducing sliding tariff scales in irrigated

agriculture as well. In the absence of measuring devices for volumetric charging, the same purpose can be served by levying lower or no water charges for users of small-scale technologies, for example treadle pumps, and users of small plots of, say, less than five hectares.

Last but not least, pricing policies that leave all responsibility for future capital investment to the user would certainly further widen the existing gaps in adoption and ownership of equipment. As for domestic water supply, the lack of subsidised infrastructure development targeted at the poor in the past has caused highly skewed access to irrigation assets now. Moreover, technologies appropriate for smallholders are simply not available on the shelves. Therefore, DWAF and other agencies started to promote irrigation technologies that are appropriate and affordable for smallholders, such as treadle pumps and bucket drip irrigation systems, or water harvesting techniques. More attention is also paid to the credit facilities that are indispensable for financing these technologies. Although private markets are expected to be crucial for the manufacturing and dissemination of these technologies, external support to catalyse these developments is needed.

Conclusion

The most tangible but analytically flawed implication of the statement that "water is an economic good," pricing of the capital and operational costs of infrastructure, has been implemented as a blanket policy and proven to have considerable cost to society in that water deprivation is aggravated and inequities are amplified. The challenge is to ensure that at least part of the funds that the government gains by charging the non-poor and large water consumers, and introducing sliding tariffs and cross-subsidisation are used to combat water deprivation and redress inequities. This can be achieved, for example, by ensuring better access to new infrastructure by poor people and promoting the design, testing and dissemination of appropriate low-cost technologies and water service provision, and financing facilities. Last but not least, for the case of irrigation, more value per drop for the poor is to be recognised as the precondition for any recovery of a small, reasonable part of considerable profits. Co-ordination and synergy between government agencies and between the government, the private sector and NGOs are indispensable.

Pricing as a tool for water conservation and demand management is not about poor people having to give up the use of water, but saving water where it can be saved without major implications for the beneficial use. Demand measures are to address the larger farmers and the larger consumers—the "big fish" in terms of water use, wasting and polluting.

4. Water allocation to poor women and men: legal tools

Formal water law in South Africa

Whereas economic tools steer water allocation indirectly, legal tools do so in a direct way. Under growing competition for scarce water, legal tools for water allocation in the new water management paradigm ensure that poor people's current water use

is protected and that poor new entrants can still access water as new entrants and satisfy their unmet basic water needs. Pro-poor water legislation not only implies that there should be a formal legal framework in which poor people's water needs have priority, but also that the law is implemented and enforced. The state, as custodian of the nation's water resources and legislator, has an important role to play, but collaboration and integration across governmental and non-governmental agencies and local social, political, and legal arrangements are vital as well.

In South Africa, the Water Services Act (1997) and the National Water Act (1998) provide various legal tools that are potentially effective, and possibly the most progressive in the world, to eradicate water deprivation under growing water scarcity. These tools are the following. As already mentioned, the Reserve sets aside a minimum amount of water, currently set at 25 litres per capita per day, for basic human needs. The Reserve also includes an ecological element. After allocating the Reserve and water required to meet international obligations, the government authorises water use in four ways. Firstly, all users are, in any case and without registration or payment, authorised to take water for, among other things, "reasonable domestic use, watering gardens and stock watering," but not for commercial purposes, as stipulated in Schedule 1 of the Act. This component of the Act benefits all, including poor people.

Secondly, the legislation authorises the continuation of "existing lawful use" (and thus the inequities in that use). New water uses are authorised by the government through, thirdly, general authorisations or, fourthly, licences. General authorisations concern relatively small uses in situations without current or expected water stress. They apply to a certain area, a particular water resource, a particular category of users, etc. As indicated in the General Authorisation of October 1999, farmers in areas without water stress are authorised to irrigate up to 25 hectares, at 6000 cubic meters per hectare per annum. This situation is applicable to a wide range of formerly disadvantaged farmers. The general authorisation of October 1999 also indicates the water-stressed areas for which the general authorisation does not apply. Evidently, allocation is most critical in these water-stressed areas.

For all new water uses beyond general authorisations, licences are needed. Licences may be issued for a maximum of 40 years. The terms and conditions of a licence are regularly reviewed. Should an amendment of a licence condition severely prejudice the economic viability of an undertaking, the licensee may claim compensation. Licences may be surrendered in order to facilitate the application for a licence for that water allocation by another user and, thus, represent a monetary value. While the issuing of a licence authorises the person or institution to use water, it does not guarantee availability of water.

In the future, the government will call for compulsory licensing of water users in water-stressed areas where there are, for example, problems experienced or expected from over-utilisation and competing water uses. Such calls for compulsory licensing by the Minister will apply to all water users, including those authorised under the continuation of "existing lawful use" component of the Act and those operating under a general authorisation. On the basis of all applications for licences, the responsible authority proposes an allocation schedule. In this, among others,

the authority has to consider how to "allocate to each of the applicants to whom licences ought to be issued in order to redress the results of past racial and gender discrimination in accordance with the constitutional mandate for water reform" (National Water Act, Part 8, Section 45). After further rounds of public comments, a final allocation schedule is compiled. Such compulsory licensing and reallocation, then, is the legal tool par excellence that can be used to allocate (but not guarantee) water to the poor that was claimed by the non-poor before.

DWAF has started a massive campaign to register current water uses that either will have to be licensed or that are generally authorised but still substantial and/or for which the payment of fees is required. An example of the latter is irrigation use above 50 cubic meters surface water or 10 cubic meters ground water per day. DWAF has invited such water users, including farmers, industry, local authorities, a Water Board or any other recognised Water Services Provider or Water Users' Association, to fill a registration form on their current water use (Department of Water Affairs and Forestry, 12 November 1999).

In the registration, the estimation of quantities of water used lies with the user but can be checked by the water authority. For the moment, the state has limited measuring capacity to prove deviations from the uses as estimated by the user. In the case of agriculture, this use is considered to be a function of the local crop water requirements as calculated in the SAPWAT model, and efficiencies and land size; return flows are not taken into account.

Registration will provide crucial information for future water management. It may reveal whether water that is claimed according to decades-old documents such as permits for mines, or water allocations for irrigation schemes, or even basin-transfers is, in reality, used or not.

Implementation in inequitable society

When the National Water Act was formulated and adopted in the mid-1990s, it critically challenged prevailing inequities in water use by introducing a powerful legal tool with a potential for change. The next hurdle is the implementation of the law, challenging the continuation of these inequities in reality. As "existing lawful use" has been authorised under the new law, the old racist and discriminatory practices that the Act precisely aims to overcome are still legal practice. Examples of the continuation of former discrimination, like using the argument that "water has already been allocated" are reported as the simple and effective negation by the powerful of black claimants of water (Woodhouse and Hassan 1999). The new options under the National Water Act are still largely unknown. Emerging farmers who want to "legalise" their current or intended water use do not know where to go. Persistent accusations of "illegal use" may render black people even hesitant to register current use.

The current campaign for registration of water use would be a first step towards recognising poor people's current water use (and charging fees). However, registration is easy for the organised users who were already registered in the past, like the former Irrigation Boards, industries and mines. But as yet, none of the smallholder schemes has been organised into an association that fulfils the criteria

to be registered as Water Users' Association. Many small schemes, like food gardens supported by a wide range of NGOs, churches, etc., or spontaneous initiatives to start irrigation, function almost unnoticed. If the poor already drop out at the first step to legalise water use, even the limited quantities of water that they use today, risk being allocated to others. Therefore, in provinces like Mpumalanga and the Northern Province, DWAF undertakes specific efforts to compile exhaustive lists of the formerly state- or NGO-supported schemes.

While poor people's basic drinking water rights are well protected in the Reserve, priority allocation of water for agricultural and other productive use by marginal and small farmers has not been stipulated in concrete and operational rules that can be implemented as yet. Such specification needs to go beyond household level, in order to ensure that both men's and women's entitlements to water are considered. The latter will be most relevant, for example, when membership of the future Water Users' Associations is established.

One possible way to translate the basic principle of redressing inequities into concrete pro-poor legislation is to adapt general authorisations and to authorise categorically the use of relatively small quantities of irrigation water by farmers who have limited access to land. For example, Schedule 1 water use is authorised by law without any registration nation-wide. Schedule 1 refers to reasonable personal use and also includes water use for home garden watering, but it explicitly mentions "not for commercial purposes." Even though gardens of the rich may exceed the sizes of vegetable plots in community gardens, the specification "not for commercial purposes" excludes poor and emerging smallholders who are definitely market-oriented and price-oriented, and certainly want to become so if markets were better. That specification could be cancelled.

A similar but more site-specific option would be to extend the existing General Authorisation for irrigation up to 25 hectares in areas without water stress, to those parts of water-stressed basins where water competition is still absent or low. As local variation is huge, many such sites could be identified. This would empower poor farmers especially for future competition. If competition over water is already strong, General Authorisations for specific sites may be most effective and enforceable where competing poor and better-off farmers are grouped together in separate upstream and downstream sites. However, if water competition is between neighbours at the micro-level, larger holders may find ways to become eligible as well, for example, by splitting up their holding administratively and claiming water as many small users. Moreover, poor people's new rights are probably difficult to enforce.

Whatever the most effective legal tool would be to endow the poor with water rights in a general way, this is only one side of the coin. Under competition for water, authorising some is only effective if others are "de-authorised." Voluntary water demand management measures among the better-off are important non-legal tools currently being designed by DWAF. However, in the end, the legal tool of compulsory licensing would be needed as it is binding. Under compulsory licensing, smallholders could get licences for optimal water use while allocations for the non-poor could be reduced.

Measurement and enforcement of water use according to the licences would be a prerequisite. However, the risk exists that the complex procedures for compulsory licensing could be recaptured by the literate, well-informed and organised water users. Therefore, simultaneous efforts are needed to devise enforcement mechanisms. A crucial component of enforcement is the empowerment of poor people themselves: informing them of their rights, building their negotiation capacity, and ensuring their effective inclusion in forums for negotiation over the formal allocation schedule and its later implementation. For the implementing water authority this requires not only a thorough understanding of and building upon current local realities and legal arrangements, but also strong facilitation skills and commitments to the ultimate purpose of the Act. Support from NGOs will be indispensable as well.

Legal and non-legal measures to take water away from current users will critically depend upon the amounts of water at stake. If larger farmers have to cede only some 10 percent of their former use, the job is obviously much easier; compensation procedures, as the National Water Act foresees if the profitability of an enterprise is seriously affected, can be avoided. Reportedly, a number of large farmers in South Africa may well see saving 10 percent of water use as a reasonable measure, if it were needed. A better understanding of the quantities at stake, and national and local sensitisation campaigns for voluntary water use restrictions by large users, are to accompany pro-poor legislation.

Another important direction in which pro-poor legislation will be further specified is through the National Water Resources Strategy and especially the Catchment Management Strategies, which provide a legally binding framework for water management. Catchment Management Strategies, which ultimately will be developed for each of South Africa's 19 Water Management Areas are specific and adapted to the widely varying local conditions and scarcity situation, and should specify water use and needs by poor women and men. They are formulated in close collaboration with water users in the basin through Catchment Management Agencies.

Conclusion

To conclude, if the aim of water management is to eradicate water deprivation, legal tools for priority water allocation to poor people are indispensable. The National Water Act of 1998 provides such tools in its over-arching principle that inequities from the past need to be redressed. However, this has to be translated into more concrete rules for non-domestic water uses as well, and, if there is competition, accompanied by concrete legal tools to take water smoothly away from current large users.

The main challenge for South Africa is the implementation of the new set of pro-poor legal tools and policies. At this stage, inequities could further widen due to the appropriation of the implementation process by the better-off, literate and powerful water users, who find their way to the government anyhow. So implementation of the law needs to be accompanied by massive information, organisation, and empowerment of the masses of poor, illiterate water users, still excluded from communication channels with the government even for simple registration, and hardly aware of their formal rights. Co-operation between the entire government,

DWAF, Catchment Management Agencies, NGOs, poor communities and other water users is clearly needed. Structurally new forms of water governance are warranted.

5. Water allocation to poor women and men: governance

Catchment Management Agencies in South Africa

Today, new forms of governance of water are high on the policy agenda. Key ingredients such as more users' participation, self-financing of water management and better consideration of the hydrological boundaries of basins in management, are all supposed to improve governance of water, besides reducing state expenditures. Such new governance rarely aims at poverty eradication. As the first experiences with public participation and river basin management in South Africa show, the initiative and authority of the government remain pivotal to include poor people structurally in new governance forms and facilitate the implementation of pro-poor economic and legal tools.

South Africa is a pioneer in creating new governance structures for water management by establishing Catchment Management Agencies (CMAs) for gradual delegation of water resource management from the Department of Water Affairs and Forestry to these new agencies. CMAs will function directly under the Minister and will be steered by a Governing Board and Committees that represent public interests. CMAs will be supported by a chief executive officer and technical staff. Initial tasks of the CMA include the development of the above-mentioned Catchment Management Strategy and advisory, monitoring and co-ordinating tasks. Collection of water charges is one of the early tasks to be taken over from DWAF. Once CMAs have proven to be mature and self-financing, responsibilities such as water allocation and licensing will also be handed over. The first two pilot projects to establish CMAs are in the water-stressed and polluted Nkomati and Olifants basins.

Already, since 1994, the South African government has actively promoted users' participation, for example during the formulation of the National Water Act. Regional offices of the DWAF also increasingly involved users. In the Nkomati and Olifants basin, for example, DWAF actively collaborated in public initiatives on issues like pollution by mines and water scarcity for downstream environmental needs. At that time and for those issues, the main actors were white, middle-class industrialists, environmentalists and consultants. In both basins, the establishment of the CMA and formulation of the formal proposal built upon these already ongoing public initiatives. The major challenge was to bring the hitherto excluded black communities on board, both in the composition of the relevant forums and the contents of the proposal.

In the Olifants basin, which covers 50,000 km^2 and has 3.4 million inhabitants, a two-pronged strategy was followed to consult the public and create inclusive forums for the formulation of the proposal. One process focussed on the final output of a written proposal for the CMA and was implemented by a predominantly white consultancy firm; this had to be finalised within a tight time frame of one year and

a half. The second process specifically targeted poor smallholders and was basically implemented by two black consultants. The two very different meanings of "public consultation" that emerged are illustrative for the governance issues at stake in the new water management paradigm.

Negotiating formal stakeholders' agreement

In the first, general process that took place from mid-1999 till end-2000, two rounds of five public meetings were held covering all five proposed sub-catchments throughout the basin. In each of the rounds, about 700 people participated. These meetings were basically one-way information sessions on the general aims and structure of a CMA and proposed sub-catchments. The main language was English, with limited translation into the languages that the majority of participants mastered. Participants' main input was voting on the name of the CMA.

Parallel to these public meetings, a Stakeholder Reference Group was created. Initially, this group was mainly composed of the white, mainly male participants in the earlier public consultation on pollution and environmental water needs. From the first round of public meetings volunteers were invited to participate in the Stakeholder Reference Group as well. This rendered the composition of the Stakeholder Reference Group more race-balanced (but still very male-dominated). In this Stakeholder Reference Group, the discussions on the CMA proposal were slightly more detailed, but still based on the ideas of the consultants, who also wrote all parts. From the consultants' perspective, the process of public participation seemed mainly a matter of negotiating the formally required agreement and endorsement for the proposal by "the" stakeholders. The Stakeholder Reference Group was increasingly shaped and seen as "the stakeholders." The draft proposal of August 2000 admits that during the establishment of this CMA, no attention was paid to gender and poverty issues.

Bottom-up empowerment for improved irrigated agriculture

The second process, which was targeted at poor small-holders, started on the initiative of DWAF half-way through the first process, when it became clear that the public consultations were not sufficiently addressing the problems of previously disadvantaged emerging farmers. The aim was to explore the establishment of a Smallholder Forum in the Olifants basin as a channel to speak out in the CMA (Khumbane et al. 2000). Three hundred and sixty five black people participated in nine workshops. They came from NGOs, women's organisations, farmers' initiatives, including those engaged in land reform, local government and tribal authorities. The discussion, in the local languages, focussed on people's own assessments of key problems in water management for agriculture and livelihoods. It highlighted problems such as the need for land and land reform, markets, training, and better organisation in order to make productive use of water. Cases of competition over water that still reflected the old water laws were brought up as well. The participants designed structures for a Smallholder Forum that is now proposed to become part of the new CMA and will have representation in the CMA Governing Board. In the future, this forum may also serve the wider purpose of better organising emerging farmers

for profitable agriculture, for example by forging better links between traders and producers. In this second process public participation was clearly interpreted as poor farmers' empowerment and structural integration in the CMA forums.

Conclusion

These very first experiences with new forms of basin-based governance in South Africa highlight significant differences in "public participation" and its effectiveness to address water-related poverty issues. Information is an important first step, for which DWAF is now developing multi-media information strategies to reach people effectively nation-wide. But information alone is not enough if poor people's voices in actual water management are to be heard. DWAF keeps the responsibility that the new governance structures encompass forums of poor water users that are based on felt priority problems regarding water and land use and on self-organisation for change. Their concerns should be reflected and integrated in the CMA proposal and later policy documents such as the Catchment Management Strategies. As long as such forums do not exist, which tends to be typically the case for poor people, governments have a role in creating them. Such forums need integrated support not only from the water sector but also from other government agencies and NGOs.

6. Conclusions

There is ample evidence that mainstream economic, legal and governance tools to manage water aggravate poverty by further reducing poor people's beneficial use of water, especially in water scarce areas. Imposing equal treatment for all in unequal society aggravates poverty. Inequities can only be redressed if the new paradigm of water management is adopted that starts with recognising that water is most scarce for poor men and especially poor women. As a corollary, the primary aim is to develop water for both domestic and productive uses as the potentially powerful lever for poverty eradication and gender equity, even more so if effective collaboration is established within and outside the water sector. In order to realise that potential, new policies are needed. New policies and intervention tools are proposed.

1. Economic tools

- Water valuation attaches the highest value to a society that provides for all water-related basic needs of its people. The full range of productive and domestic benefits of water and the distribution of benefits within society are taken into consideration. Benefits accruing to poor men and women are specifically and primarily targeted. This requires the development of economic valuation tools that enable water managers to weigh up the real value of water to poor communities, against the "market value" accorded to water in the wealthier sectors of the communities.

- Infrastructure costs to fulfil basic consumptive needs are fully subsidised up to minimum levels of service. Subsidised programmes to promote the development of appropriate low-cost technologies for poor women and men are reinforced, not swept from the agenda under the pretext of "equal treatment," ignoring the disproportionate benefits the non-poor received from huge subsidies in the recent past. Lessons learned on the smart use of subsidies for sustainable benefit are taken into consideration. Integrated support is provided to poor water users to increase the incomes from water-related production, in order to have sufficient profits from which capital and operational costs can be paid.

2. Legal tools

- In the nation's water law, water is set aside to fulfil basic consumptive and productive needs of poor people first. General principles in the law to redress inequities are translated into operational, effective rules for water allocation to poor users first and foremost. Implementation and enforcement of pro-poor legislation is pursued.

3. Governance tools

- New systems of water governance at basin-level, like the Catchment Management Agencies in South Africa, play an important role in implementing the new water management paradigm. As CMAs and user participation are not intrinsically pro-poor, public consultation processes are explicitly and pro-actively shaped to organise the poor to ensure equal voices to all.

4. Integration

- Water professionals actively co-ordinate and integrate their actions with other government and non-government agencies to create the synergy needed to alleviate water-related poverty. Water ceases to be the exclusive mandate of water professionals. Instead, the overall mandate becomes poverty eradication to which each profession has a contribution to make.

- These changes require inter-departmental liaison-structures from national to local levels, as DWAF now implements. Innovative ways are developed in which a range of professionals use their expertise and develop new knowledge for the benefit of poor people.

CMAs, water managers, development activists and government officials all need to be equipped with the knowledge, tools and methodologies for using water to improve the lives of poor people and of poor women in particular. The continual achievement of these aims also requires the on-going monitoring of the impact of water management decisions on the poorest of the poor. This forms the key performance indicator of any department or body involved in the management of water.

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Bibliography

Agarwal, Bina. 1994. A field of one's own. Gender and land rights in South Asia. South Asian Studies 58. Cambridge, Great Britain: University Press.

Bakker, Margaretha; Randolph Barker; Ruth Meinzen-Dick; and Flemming Konradsen. 1999. Multiple uses of water in irrigated areas: a case study from Sri Lanka. SWIM Paper 8. Colombo, Sri Lanka: International Water Management Institute.

Burkina Faso, Ministère de l'Agriculture et de l'Elevage. Direction des Etudes et de la Planification and Ministère du Plan et de la Coopération, Centre Régional de Production Agro-pastorale Centre-Nord. 1989. Analyse de l'enquète d'envergure campagne agricole 1986–1987. Ex-ORD du Centre-Nord. Kaya, Burkina Faso.

Carney, Judith. 1988. Struggles over land and crops in an irrigated rice scheme: the Gambia. In: Jean Davison (eds). Agriculture, women and land. The African experience. pp 59–78. Boulder, Colorado: Westview Press.

Chancellor, Felicity. 1996. Women in irrigation: case studies of schemes in the Gambia, Kenya, and South Africa. Report OD/TN 82. Wallingford: HR Wallinford and ODA.

Cousins, Ben. 2000. Introduction: does land and agrarian reform have a future and, if so, who will benefit? In: Ben Cousins (ed.) At the Crossroads. Land and agrarian reform in South Africa into the 21st century. Papers from a conference held at Alpha Training Center, Broederstroom, Pretoria, 26-28 July 1999. Cape Town: Program for Land and Agrarian Studies, School of Government at the University of the Western Cape and National Land Committee.

Dey, Jennie. 1980. Women and rice in the Gambia: the impact of irrigated rice development projects on the farming system. Ph.D. thesis, University of Reading.

Food and Agriculture Organisation of the United Nations (FAO). 1998. Rural women and food security: current situation and perspectives. Rome: FAO.

Hanger, Jane; and Jon Morris. 1973. Women and the household economy. In: Chambers, Robert, and Jon Moris (eds). Mwea: an irrigated rice settlement in Kenya. Munchen: Weltforum Verlag.

Hulsebosch, Joitske; and Doris Ombara. 1995. Towards gender balance in irrigation management: experiences in Kenya South-West Kano Project. Irrigation and Drainage systems. 9. pp 1–14. Kluwer Academic Publishers Netherlands.

Imbs, Françoise. 1987. Kumtaabo: une collectivité rurale Mossi et son rapport à l'espace (Burkina Faso). ASASS 21. Paris: Orstom.

Khumbane, Tshepo, KMI and Techno Interfacing. 2000. Report: consultation process. Establishment of small-scale farmer irrigation forums in the Olifants.

Makhura, T.; and M.T. Ngqaleni. 1996. An analysis of women's status in agricultural development in the Northern Province. Chapter 13 in M. Lipton, F. Ellis, and M. Lipton (eds). Land, Labour and Livelihoods in Rural South Africa. Vol. 2. Durban: Indicator Press.

May, Julian. 2000. The structure and composition of rural poverty and livelihoods in South Africa. In: Ben Cousins (ed.) At the Crossroads. Land and agrarian reform in South Africa into the 21st century. Papers from a conference held at Alpha Training Center, Broederstroom, Pretoria, 26-28 July 1999. Cape Town: Program for Land and Agrarian Studies, School of Government at the University of the Western Cape and National Land Committee.

Perry, Chris; Michael Rock; and David Seckler. 1997. Water as an economic good: a solution, or a problem? Research Report 14. Colombo, Sri Lanka: International Water Management Institute.

Republic of South Africa. 1998. National Water Act. Government Gazette. Vol. 398. 26 August 1998. No. 19182. Cape Town: Office of the President.

Republic of South Africa. Department of Water Affairs and Forestry. Establishment of a Catchment Management Agency for the Olifants Water Management Area. Proposal to the Minister. DRAFT August 2000.

Republic of South Africa. Department of Water Affairs and Forestry. 1999. Public Participation for CMAs and WAUs. Guide 4 in the CMA/WUA Guide Series. Pretoria: Department of Water Affairs and Forestry.

Republic of South Africa. Department of Water Affairs and Forestry. 1999. General Authorisations in Terms of Section 39 of the National Water Act, 1998 (Act no. 36 of 1998). Government Gazette No. 20526 8 October 1999 Government Notice no. 1191. Pretoria: Department of Water Affairs.

Republic of South Africa. Department of Water Affairs and Forestry. Establishment of a pricing strategy for water use charges in terms of Section 56 (1) of the National Water Act, 1998. Government Gazette 20615. 12 November 1999. Pretoria: Department of Water Affairs and Forestry.

Safiliou, Constantina. 1985. The persistence of women's invisibility in agriculture: theoretical and policy lessons from Lesotho and Sierra Leone. Economic development and cultural change. Vol 33 (2). Pages 299-317.

Safiliou, Constantina. 1986. Agricultural strategies and programmes, the status of women and fertility. Background paper for the International Seminar on Women in Agriculture and Rural Development in Asia, Huangxian, China (FAO/ESH/A86/3).

Safiliou, Constantina. 1988. Farming systems and gender issues: implications for agricultural training and projects. Unpublished paper. Ministry of Agriculture and Fisheries of the Netherlands and the International Agricultural Centre. Wageningen.

Safiliou, Constantina. 1991. Gender and rural poverty in Asia: implications for agricultural project design and implementation. In: Asia-Pacific Journal of Rural Development Vol. I. No.1

Safiliou, Constantina. 1994. Agricultural policies and women producers. In: Adepoju, Aderanti and Christine Oppong (eds). Gender, work and population in Sub-Saharan Africa. International Labor Organisation. London: James Currey and Heinemann.

Shah, Tushaar; B.van Koppen; Douglas Merrey; Marna de Lange; and M Samad. 2000. 'Institutional Alternatives in African Smallholder Agriculture: Lessons from International Experience in Irrigation Management Transfer', paper presented at 'National Policy Workshop on Irrigation Management Transfer and Rehabilitation of Smallholder Irrigation Schemes' June 21, 2000 at Hazy View, Mpumalanga, South Africa.

United Nations Development Programme (UNDP). 1995. Human development report 1995. New York: Oxford University Press.

Van Koppen, Barbara. 1990. Women and the design of farmer-managed irrigation schemes: Experiences provided by two projects in Burkina Faso. Contributions International Workshop Design for Sustainable Farmer-Managed Irrigation Schemes in Sub-Saharan Africa. February 1990. Wageningen Agricultural University.

Van Koppen, Barbara. 1998. More jobs per drop: targeting irrigation to poor women and men. Ph.D. Thesis Wageningen Agricultural University. Amsterdam: Royal Tropical Institute.

Van Koppen, Barbara. 1999. Irrigation management transfer in Arabie/Olifants Scheme: an appraisal. Mission Report. Unpublished.

Van Koppen, Barbara; Carien Joubert; and Lizinda Grobbelaar. Gender and irrigation in the Tongwane Basin, South Africa. South Africa Working Paper. Colombo, Sri Lanka: International Water Management Institute. Forthcoming.

Woodhouse, Philip; and Rashid Hassan. 1999. Implementation of the National Water Act. Catchment Management Agencies: Interests, access, and efficiency. Inkomati Basin Pilot Study. Pretoria: Department of Water Affairs and Forestry, South Africa and DFID Southern Africa Department for International Development, United Kingdom.