

REPUBLIC
OF
SOUTH AFRICA



REPUBLIEK
VAN
SUID-AFRIKA

Government Gazette Staatskoerant

Vol. 413

PRETORIA, 12 NOVEMBER 1999

No. 20615

We all have the power to prevent AIDS

AIDS
affects
us all



A
new
struggle

Prevention is the cure

**AIDS
HELPLINE**

0800 012 322

DEPARTMENT OF HEALTH

GOVERNMENT NOTICE GOEWERMENTSKENNISGEWING

DEPARTMENT OF WATER AFFAIRS AND FORESTRY DEPARTEMENT VAN WATERWESE EN BOSBOU

No. 1353

12 November 1999

NATIONAL WATER ACT (ACT No. 36 OF 1998)

ESTABLISHMENT OF A PRICING STRATEGY FOR WATER USE CHARGES IN TERMS OF SECTION 56(1) OF THE NATIONAL WATER ACT, 1998

I, Ronald Kasrils, MP, Minister of Water Affairs and Forestry, with the concurrence of the Minister of Finance, hereby in terms of section 56(1) of the National Water Act (Act No. 36 of 1998), establish a pricing strategy for raw water use, as contained in the schedule hereto.

SCHEDULE

A PRICING STRATEGY FOR RAW WATER USE CHARGES

PREFACE

The National Water Act, 1998 (Act no. 36 of 1998) has provided for fundamental reform of the law relating to the protection, use, development, conservation, management and control of water resources on the basis of equity and sustainability as central guiding principles. These guiding principles also recognise the need to promote social and economic development through the use of water and the need to establish suitable water management institutions in order to achieve the purpose of the Act.

The Act also provides the broad policy framework for measures to finance the provision of water resource management services and the development of water resources, as well as financial and economic measures to support the implementation of strategies aimed at water resource protection, conservation and the beneficial use of water.

This document provides a strategy for implementing the pricing of the use of raw water within the mentioned policy framework. It is the result of a wide consultation process as prescribed in the Act. Interested parties contributed to the final form of this document through their comments, which were duly considered and the essence of which was incorporated into the document where value was added.

This raw water pricing strategy has been designed by South Africans for South African conditions, recognising that water is a scarce and unevenly distributed national resource. I am satisfied that the measures adopted will result in equitable treatment of all sectoral interests, while promoting efficiency, and will also redress the imbalances in access to water as a result of past laws.

Ronald Kasrils, MP
Minister of Water Affairs and Forestry

TABLE OF CONTENTS

1	INTRODUCTION.....	4
2	WATER SUPPLY AND DEMAND.....	4
2.1	FACTORS INFLUENCING SUPPLY	4
2.2	FACTORS INFLUENCING DEMAND	5
3	ADDRESSING THE PROBLEM.....	5
3.1	SUPPLY-SIDE VERSUS DEMAND-SIDE MANAGEMENT	5
4	THE OBJECTIVES THAT SHAPE THE NEW PRICING STRATEGY.....	6
4.1	SOCIAL EQUITY	6
4.2	ECOLOGICAL SUSTAINABILITY	6
4.3	FINANCIAL SUSTAINABILITY.....	7
4.4	ECONOMIC EFFICIENCY.....	7
5	IMPLEMENTATION OF THE NEW PRICING STRATEGY.....	8
5.1	WATER SUBJECT TO PRICING.....	8
5.2	DEFINITIONS OF WATER USE	10
5.3	PRICING STRATEGY FOR WATER USE.....	11
5.3.1	<i>Funding water resource management</i>	12
5.3.2	<i>Funding water resource development and use of waterworks</i>	16
5.3.2.1	Government water schemes	16
5.3.2.2	Schemes funded by water management institutions.....	23
5.3.3	<i>Achieving the equitable and efficient allocation of water</i>	23
5.4	TRANSPARENCY AND ACCOUNTABILITY.....	25
6	PHASING IN THE NEW APPROACH.....	25
6.1	INTRODUCTION.....	25
6.2	PHASING IN THE VARIOUS CHARGES	26
7	APPLICATION OF PRICING STRATEGY TO DIFFERENT CATEGORIES OF WATER USE / USER SECTORS.....	27
7.1	DISCHARGE OF WASTE.....	27
7.2	WATER SERVICES AUTHORITY SECTOR.....	28
7.3	INDUSTRIAL, MINING AND ENERGY SECTOR	30
7.4	IRRIGATION SECTOR	31
7.5	STREAM FLOW REDUCTION ACTIVITIES	36
8	CONCLUSION	37
9	GLOSSARY OF TERMS.....	38

1 INTRODUCTION

The broad principles underlying the new approach to the pricing of water use are already reflected in the *White Paper on a National Water Policy for South Africa, 1997*, and in Chapter 5 of the *National Water Act, 1998* (the Act). This document expands on those broad principles, in a manner consistent with the provisions of the Act, and provides a framework for implementing the new pricing strategy for water use.

This strategy refers to pricing the use of water from South Africa's **water resources**, and not to the pricing of **water services**. Water services, including the pricing thereof, have been dealt with separately in the Water Services Act, 1997. In other words, the new approach deals with first tier water, i.e. the use of raw water from the water resource. It does not deal directly with second and third tier water, i.e. water supplied in bulk (often by water boards) and distributed to households (usually via a water services authority), except for water supplied by Government water schemes. The strategy deals with all first tier water as reflected in the use of ground and surface water resources and covers the setting of prices by the Department of Water Affairs and Forestry (DWAF) as well as by water management institutions as defined in the Act.

2 WATER SUPPLY AND DEMAND

In formulating such a new water pricing strategy, it will be necessary to meet the challenges presented by the existing and growing imbalances between the availability, supply and demand for water in South Africa. The increasing gap between supply and demand has been confirmed by studies carried out by the DWAF, which indicate that the quantity of remaining surface water resources available to meet South Africa's needs within the most important water catchments will be adequate only until the year 2030 if the present usage patterns are maintained. Some catchments are already over-allocated and the water resources are highly degraded and non-sustainable.

2.1 Factors influencing Supply

There are a number of factors that influence the **supply** of water in South Africa. These include the fact that:

- much of the country is semi-arid with relatively low rainfall;
- rainfall patterns are erratic, i.e. not consistent in terms of the parts of the country or the time of year in which it falls;
- regions of high runoff are often situated away from areas of maximum water demand;
- the country's groundwater - which is often the main source of supply of water in rural areas - is limited and often of poor quality;

- catchments have been infested by invader vegetation which uses more water than the natural vegetation; and
- decreasing water quality has an impact on the availability of water of an appropriate quality for use.

2.2 Factors Influencing Demand

On the other hand, the **demand** for water in South Africa is growing. Factors that contribute to this growth are:

- the high population growth rate;
- rapid urbanisation;
- economic development;
- demands for basic services and higher levels of service (such as in-house water rather than communal standpipes);
- the need to sustain and rehabilitate ecological systems;
- the drive to provide accessible, drinkable water for everyone in the country; and
- ineffective mechanisms, including pricing structures to reduce demand.

3 ADDRESSING THE PROBLEM

3.1 Supply-side versus Demand-side Management

In the past, the growing demand for water was accommodated by increases in supply. New dams and transfer schemes have been built to make these increases possible. However, the most easily accessible water sources will soon all have been fully utilised, and it will be necessary to go ever further afield to find new ones. In the future, unless demand patterns are dramatically altered, it will become necessary to import water from neighbouring countries if they are agreeable, or to resort to the desalinisation of sea water. These new supplies will be expensive, and their rising costs will have to be borne by all water users.

There are essentially two ways in which the increasing gap between the demand for and supply of water can be closed. The first involves **supply-side** management, which simply means continuing to expand supply to meet ever-increasing demand. We have suggested above, however, that this would result in significant increases in the cost of water as less favourable sources further afield have to be developed. These rising costs would ultimately have to fall on all water users.

Before these costs are incurred, it is important to make sure that the water that is already available is used efficiently and not wasted. This is best achieved by introducing **demand-side** measures to manage our water resources. By encouraging all water sectors to use water more efficiently, demand management provides a more sustainable long-term solution to the problem of water scarcity than do

supply-side measures, because it takes into account the value of water in relation to its cost of provision, thereby treating it more like a commodity.

It is important to note that the focus on water demand management does not imply that important supply-side initiatives, such as catchment management (and dealing with unaccounted-for-water), will be neglected in the new approach to water resources management. It also does not imply that infrastructure options will not be considered, where necessary. The optimal solution to address the problem is to apply integrated water resource management, involving supply-side as well as demand-side measures. Both demand and supply-side options need to be compared on the basis of cost per option.

4 THE OBJECTIVES THAT SHAPE THE NEW PRICING STRATEGY

The following objectives are of equal importance in formulating the new pricing strategy:

- Social equity¹
- Ecological sustainability
- Financial sustainability
- Economic efficiency

Each of these are elaborated upon below. These objectives are incorporated into the implementation of the new pricing strategy, which is discussed in part 5.

4.1 Social Equity

Apartheid policies distorted the provision of water supply services, so that in 1994 an estimated 12 million people did not have adequate supplies of potable water. Apartheid also generated a biased approach to water resource management, and allocation was never merely an economic matter, but a socio-political one. Government water policy, and in particular the provision of subsidies (including those associated with the provision of irrigation water), resulted in considerable advantages to large, mainly white commercial farmers at the expense of emerging black farmers and smallholders. The pricing strategy for water use charges coupled to the granting of financial assistance, will achieve social equity by redressing the imbalances of the past, both with respect to equitable access to water supply services and with respect to direct access to first tier water.

4.2 Ecological Sustainability

South Africa is committed to following a path of development that is environmentally sustainable. In the case of water, this requires that the availability and quality of water resources inherited by future generations should be adequate to

¹ Technical and other terms are explained in the glossary at the end of this report.

ensure human well-being and the maintenance of ecosystems. As part of overall water resource management, this means that we need to ensure that our levels of water consumption, use, and pollution, as well as the associated infrastructure to impound, supply, treat and dispose of the water, do not cause either unacceptable or irreversible impacts on the population or ecosystems.

The following principles underlie ecological sustainability in the water pricing strategy:

- In terms of Chapter 3 of the National Water Act, 1998, the water needs for the effective functioning of all ecosystems must be protected. The water required for this purpose refers to both the quantity and quality of water in the resource and is called the **ecological reserve**. It must be safeguarded and not used for other purposes.
- There is a cost associated with the ecological **management** of the catchment, and this should be paid for by all the users of the resource [S 56(2)(a)(iv)].
- To preserve water quality, point and diffuse sources of **pollution** should be discouraged through identification of control methods that are more effective than those presently in use. This requires the adoption of instruments such as a "polluter pays" approach to the generation of pollution. The underlying philosophy of the 'polluter pays' principle is to get the polluter to internalise the environmental cost of pollution.

As indicated in 5.2 and 7.1, the "polluter pays principle" does not form part of this pricing strategy and will be introduced at a later stage together with waste discharge charges.

4.3 Financial Sustainability

The methods that have been used by DWAF to finance major bulk raw (i.e. first tier) water schemes in the past are not financially sustainable for a number of reasons. First, inflation was not taken into account, resulting in a decline in the value of tariffs over time in real terms. Second, no provision was made for refurbishment. And third, no provision was made for asset replacement.

A new financial framework is required to accommodate the water sector's increased need to be financially autonomous, to attract greater contributions to its development from the private sector, and to be financially accountable and sustainable.

In the new approach to water pricing, it is proposed that the **full** financial cost of supplying water should be recovered from water users, including the cost of capital. The new approach would however, be phased in by taking account of the constraints within various user sectors to adapt quickly to price increases.

4.4 Economic Efficiency

Section 56 (2) (c) of the National Water Act, 1998, provides for setting a water use charge for achieving the equitable and efficient allocation of water. Economics is

concerned with the optimum allocation of scarce resources between competing uses. This applies equally to the capital resources used in the development of water infrastructure (i.e. dams, reservoirs, pipelines, etc.), and to natural resources such as water. In theory, meeting the goal of optimum resource allocation requires that goods be priced at their **opportunity cost**, which is simply the value of goods forgone (including environmental goods and services), when a scarce resource is used for one purpose instead of for its best alternative use.

If South Africa's water resources were abundant, there would be no need to consider attaching a price to the water resource itself. However, the need for water conservation and management of demand in conditions of growing scarcity is an important and increasing focus for water policy.

Ensuring an efficient allocation of the country's scarce water resources requires that the price of the resource be set to reflect its scarcity value. Failing to price water at its scarcity value can result in two kinds of misallocation of water:

- an inadequate incentive to conserve water. The resultant over-use necessitates the expansion of infrastructure prematurely, tying up the country's limited capital resources when they could be better utilised for other purposes.
- some water being used for low-value purposes. This imposes an **opportunity cost** in that this same water cannot be used for alternative, high-value purposes. Without an economic charge, there is no basis for competition for water supplies between low- and high-value uses, and thus no incentive to shift available supplies from the former to the latter.

In the context of water scarcity, an argument can be made for the introduction of **economic incentives** in water-stressed catchments to encourage the conservation of water and its shift from low to higher value use. This can be done administratively or by using market-related mechanisms.

5 IMPLEMENTATION OF THE NEW PRICING STRATEGY

5.1 Water subject to pricing

The pricing strategy follows from the four objectives already discussed. It aims to achieve the efficient and cost-effective allocation of water, equity and fairness in the allocation mechanism, and long term sustainability of the natural environment.

The starting point for the pricing strategy is the water management area as defined in section 1 of the Act, and as defined in the Government Notice no. 1160, published in the Gazette on 1 October 1999. It begins with an estimate of the utilisable water available in the area, which will be contained in the national water resource strategy (section 6 of the Act). This will be derived from geohydrological assessments and hydrological models of the rainfall/run-off/storage relationships for the relevant catchments within the water management area. From this amount five claims on water will be deducted.

The five claims are as follows:

- **Use allocatable under Schedule 1 to the Act.** This represents reasonable use, for domestic, gardening, stock and animal watering, emergency and waste discharge purposes for individuals having access to surface and underground resources and sewerage systems such as in rural and within local government areas.
- **Basic human needs.** This represents the first component of the Reserve as defined in section 1 of the Act, and provides for the essential current and future (10 year horizon) needs of individuals served by the water resource concerned and includes water for drinking, for food preparation and for personal hygiene. The free use demarcated under Schedule 1 to the Act already contains a basic human needs component for certain individuals who access the water resources directly. Since water for basic human needs constitutes a small portion of water demand, and storage dams are built mainly to provide water for economic use, it is appropriate that the DWAF makes the first tranche of 1st tier water (equivalent to that portion required to meet basic human needs, defined as 25 liters per capita per day) also available free of charge to water services authorities. This applies to water abstracted by local government by means of own works as well as supplied to them from public storage dams. The objective of providing a portion of the 1st tier water free of charge would be to promote the application of lifeline tariffs at the 3rd tier, which would ensure that all South Africans can achieve fair access to basic services (Section 56 (6) (c) of the Act).

The cost of raw water for meeting basic human needs from the source of supply in the areas of water services authorities should thus be borne by all the economic users within the water management area and those supplied from a storage dam or system. It is important to note that the subsidisation of the resource cost of 1st tier water (as it travels through to the 3rd tier) should not be considered as a subsidisation of the distribution costs of the 3rd tier provider of potable water supplies. Third tier costs must be borne in full by the relevant water services provider.

Therefore, even if the responsible authority makes the first tranche of 1st tier water available free of charge to the 3rd tier water supplier, it does not imply that such water will be free to the consumer. It is however intended that the DWAF will, through the proposed regulations in terms of the Water Services Act, require local government to set the charge to basic water supply at the lowest amount possible.

The prescribed procedure of how water services authorities can access free raw water supplies is contained in 7.2 of this strategy.

- **Long-run ecological sustainability.** This represents the second component of the Reserve, and refers to the water (quantity and quality) required to protect the aquatic ecosystems of the water resource. The DWAF will determine what these needs are, using appropriate models. In some catchments it may be necessary to reduce existing lawful uses of water below their present levels in order to provide the required ecological reserve. It may even be necessary to construct a new storage dam to provide for the ecological reserve in an over-allocated water resource. The recovery of cost of such a dam would not automatically form part of this raw water pricing strategy and subsidies may be

considered on a socio-economic basis. It is important to note that this claim does not include environmental purposes beyond the ecological reserve. For example, environmental "needs" which simply enhance the real estate value of a property (e.g. a private dam) will not be considered as necessary for long-run ecological sustainability and will not, therefore, be exempt from the pricing strategy.

- **International obligations.** The water requirements to meet South Africa's commitments regarding international waters will receive similar priority, save where specific agreements have been reached concerning the pricing and supply of water to neighbouring countries.
- **Inter-basin transfers.** The national water resource strategy (S6 of the Act) will identify and quantify water to be taken out of a water management area to augment water supplies in another area.

The water that is available once these claims have been met can be allocated within water management areas between competing water users. It can also include water imported from another water management area by means of an inter-basin transfer scheme. This water will be classified as economic use of water and is subject to pricing.

5.2 Definitions of Water Use

Section 56 of the National Water Act instructs the Minister to establish a Pricing Strategy for charges for any water use described in Section 21:

- (a) taking water from a water resource;
- (b) storing water;
- (c) impeding or diverting the flow in a watercourse;
- (d) engaging in a stream flow reduction activity (i.e. land-based activities which significantly reduce streamflow);
- (e) engaging in a controlled activity (i.e. activities having a detrimental impact on water resources);
- (f) discharging waste or water containing waste into a water resource;
- (g) disposing of waste in a manner which may detrimentally impact on a water resource;
- (h) disposing of water which contains waste from any industrial or power generation process;
- (i) altering the bed, banks, course or characteristics of a watercourse;
- (j) removing, discharging or disposing of water found underground;
- (k) using water for recreational purposes;

It is important to note that the long term objective of the Department of Water Affairs and Forestry is to systematically consider each of the 11 water uses defined above and to decide if and how each one should be priced and charged for. It is acknowledged, however, that it is not feasible to consider developing a pricing strategy for all water uses in a short period of time. For example, while the management of diffuse sources of water pollution and the development of a comprehensive waste disposal charge system are likely to be important components of a future pricing strategy, they cannot realistically be fully implemented in this "first round" of pricing strategy initiatives. The pricing strategy must therefore be

seen as a process that evolves over time; it begins by prioritising those uses of water that are likely to generate the most significant and long-lasting impact on South Africa's scarce water resources.

The intention is to include the establishment of charges only for those water uses which are consumptive uses and can be expressed in volumetric terms regarding annual quantities abstracted, stored or reducing streamflow in the initial pricing strategy. This relates to the uses specified in section 21 in the following way:

- Use (a) as far as abstraction from surface and underground water resources is concerned.
- Use (b) as far as the volume of water stored is concerned, subject to the following considerations:
 - ♦ Where water from the storage dam is abstracted for use, the volume annually abstracted will constitute the use;
 - ♦ Where storage dams are built only for recreational purposes or to enhance the real estate value of a property, and the dam derives water from a water-course having an assured low flow, or is fed by a scheme owned by the DWAF or a water management institution, the initial filling in the case of a new dam and the annual refilling in the case of an existing dam, will determine the annual quantity used. The use due to annual refilling will be based on the estimated nett annual evaporation losses from the full supply surface area of the dam under average climatic and rainfall conditions.
- Use (d) with reference to the quantified average annual use of forestry plantations for commercial purposes (Section 36 of the Act).
- Uses (f), (g) and (h) will not be covered under the initial pricing strategy. A pricing strategy is being developed for waste and waste water discharge and will form the subject of a separate future publication and consultation process in terms of section 56 of the National Water Act. The initial pricing strategy will, however, address the implementation of a charge to recover the administrative cost of water quality management.
- The other water uses mentioned in Section 21 will not be covered under this general pricing strategy, but such uses are subject to authorisation, which may include conditions for payment for the use of water in terms of this strategy, or other conditions to be adhered to.

5.3 Pricing Strategy for Water Use

In terms of the Act, the Minister may, with the concurrence of the Minister of Finance, from time to time by notice in the *Gazette*, establish a pricing strategy for charges for any water use (S 56 (1)). This pricing strategy may contain a strategy for setting water use charges-

- for funding water resource management (S 56 (2) (a));
- for funding water resource development and use of waterworks (S 56 (2) (b));
- and
- for achieving the equitable and efficient allocation of water (S 56 (2) (c)).

Each of these are discussed in more detail below. The pricing strategy can only be applied to water management areas or schemes where annual water use has been registered or licensed. In the process of registration an assessment will be made of the average annual volumetric use of all water users. The database of registered or licensed annual volumetric use, as well as the estimated annual growth in demand of authorised water users supplied from Government waterworks, will form the basis on which unit sectoral charges will be calculated for each water management area, scheme or system. The end user sectors for which unit sectoral charges for 1st tier water will be calculated and announced annually on a water management area basis are the following:

- water services authorities
- industrial, mining and energy
- irrigation
- stream flow reduction activities

The charge for storage dams from which no abstraction takes place (excluding dams storing waste water), as defined under **5.2**, will be dealt with under the industrial / mining / energy sector. The determination of annual estimated water use by means of the registration process for the irrigation and stream flow reduction sectors is set out in part **7** of this document.

5.3.1 Funding water resource management

Resource management expenditure relates to those activities that are required to regulate, manage and maintain the water resource or catchment. These costs differ from overheads in that they are not related to water sold from individual schemes but are rather the costs related to the management of all water within a water management area as defined in terms of the national water resource strategy (Chapter 2, Part 1 of the Act). These can include the costs of the following functions to be performed by the Department and/or water management institutions exercising delegated or assigned powers under the National Water Act:

- Planning and implementation of catchment management strategies in terms of Chapter 2, part 2 of the Act.
- Monitoring and assessment of water resource availability, quality and use.
- Water quantity management, including flood and drought management, water distribution, control over water abstraction, storage and stream flow reduction, and to promote the beneficial use of water.
- The evaluation and processing of water use licensing and registration applications.
- Water resource protection, water quality management and water pollution control.
- Water conservation and demand management.

Initially, water resource management will continue to be the task of the Department of Water Affairs and Forestry. However, the National Water Act clearly states that the intention is to create Catchment Management Agencies (CMAs) in a staged and

progressive manner and to delegate or assign significant water resource management functions to these bodies. Where CMAs do not exist, the DWAF will function as the CMA. The activities of the CMAs will be funded from the water resource management charges, which may be made by and are payable to the relevant CMA.² In water management areas where not all catchment management functions have been delegated to CMAs, the relevant CMA will collect charges, and funds due to the DWAF will be passed on to the Department. If the CMA exists, but lacks capacity, this can be done by the DWAF and the relevant portion passed on to the CMA.

To deal with the determination of charges for water resource management, the DWAF's budget has been restructured to contain an Integrated Catchment Management Trading Account providing for the allocation of departmental costs and collection of revenue with regard to the following main activities, under which headings the functions mentioned above can be grouped:

- Functional support (from regional offices), involving indirect costs or overheads.
- Planning and implementation of catchment management strategies. This activity includes the cost of establishing CMAs and the development of a catchment management strategy for a particular catchment within a water management area.
- Dam safety control. These activities are defined in the National Water Act and are conducted to ensure the safeguarding of human beings and their material belongings against the failure of storage dams.
- Water quality management. This activity entails the water quality protection of aquatic ecosystems and the management of return flows and the receiving water quality of all users to enable the sustainable fitness of use thereof.
- Water utilisation. This activity entails water quantity management, allocations and hydrological and geohydrological assessment and monitoring.
- Water conservation (including the Working for Water programme). This activity also includes demand management, which comprises measures to reduce the user demand for water, and the assessment and monitoring of sectoral demands. The Working for Water programme entails the eradication of water consuming invasive vegetation in water catchments, with the view of enhancing the in-stream water availability for relevant water users and the Reserve, and thus the postponement of the creation of additional storage for meeting increasing water demands.

The annual budgets for the listed activities can include the costs of the DWAF regional and / or CMA operational personnel and administrative expenditure, consulting services and work performed by contractors.

Implementing a charge to fund water resource management

The determination of water resource management charges by initially DWAF and later CMAs, will proceed in the following manner:

² CMAs may also receive funding from funds appropriated by Parliament, and from other sources.

- Cognisance will be taken of water management areas established in terms of the national water resource strategy, within which the DWAF and/or CMAs will conduct integrated water resource management.
- Water resource management activities to be conducted in each water management area in line with the restructured budget, will be determined.
- Costs will be allocated during the budgetary process to water resource management activities in each water management area.
- All user sectors as defined in 5.3, to which activities apply, will be identified per water management area.
- The total estimated annual water use of each user sector, as well as the quantity of water to be supplied to another water management area via an inter-basin transfer scheme, will be determined per water management area. This will be done over a period of time, until a water use allocation plan has been prepared in terms of section 9(e) of the Act, on the basis of individual registered and licensed water uses and the utilisable water available for an as yet underutilised water management area. This could mean an initial over-estimate of actual sectoral use which will be phased out. An assessment will also be made of the basic human needs requirement for the water services authority sector, which will not be subject to first tier pricing (see 7.2).
- The inter-basin transfer of water from one water management area to another will result in a reduction in the quantity of water available for use in the donor area. Consequently, the potential for generating funds from water use charges for water resource management activities will be reduced in the donor area. Conversely, the receiving area will be able to raise additional water resource management charges on the use of the transferred water. Under these circumstances some of the charges raised in the receiving water management area will be transferred to the donor area for water resource management purposes. The amount to be transferred will be based on the product of the budget for water resource management in the donor water management area and the ratio of the transferred water quantity to the total utilisable water available in the donor area. DWAF will facilitate the transfer of costs between the relevant CMAs.
- The costs of water resource management activities and any input cost related to the inter-basin transfer of water will be allocated to user sectors. Cost allocation will differentiate between activities in that the cost of certain activities will only be borne by some, and not all, user sectors, taking into account the relative benefits accruing to the various sectors by executing the activities.

The apportionment of activity costs will be done pro rata to the average registered, licensed or estimated annual water use of sectors benefiting from the activity. In determining average annual volumetric use, the assurance of supply to users from schemes owned by water management institutions will be taken into account. (see 5.3.2.1 for dealing with existing Government water schemes). The water resource management activity costs to be borne by individual user sectors will be determined as follows:

- ◆ Water services authority sector — This sector will attract all activity costs in a water management area, but only in proportion to their “economic” use of water (i.e. excluding basic human needs) in relation to total estimated annual “economic” use (see 7.2).
 - ◆ Industrial, mining and energy sector — This sector will attract all water management activity costs pro rata to its share of total “economic” use in the water management area.
 - ◆ Irrigation sector — This sector will attract all water resource management activity costs pro rata to “economic” use, except those related to the subsidisation of the working for water programme (see 7.4).
 - ◆ Streamflow reduction activities — Currently, afforestation is the only declared streamflow reduction activity, but in the near future other dry-land farming activities could be added to the list. Afforestation will attract all water resource management costs, pro rata to “economic” use, except for dam safety control and the “working for water” programme.
- A differentiated subsidy policy will be applied to determine annual costs to be recovered from the various user sectors. In this regard, standing agreements with regard to the subsidisation of existing activity costs will form part of the pricing strategy. The Act also makes provision in clause 56(3)(e) for the waiving of charges in respect of certain water users. This is described in more detail in part 7 below.
 - Sectoral water resource management charges for each water management area will be determined by dividing recoverable sector costs, per activity, by the registered or total estimated utilisable annual volume consumption for the sector (the latter in the case of under-utilised water management areas).
 - Water sales accounts of registered water users will be determined by multiplying the relevant sectoral unit charge by the registered annual volume of water. These charges will therefore result in fixed payments which will be invoiced on a six-monthly basis for the irrigation and stream flow reduction sectors and on a monthly basis for the other sectors. The DWAF and / or CMA's may, based on cost considerations, determine minimum cut-off values of registered volumetric use per person, below which water users will not be invoiced.
 - In under-utilised water management areas, the deficit in budgeted water resource management costs to be recovered by means of charges which are based on total estimated water use, will be subsidised from the Exchequer by means of the DWAF trading account.

5.3.2 *Funding water resource development and use of waterworks*

Water resource development and use of waterworks relate to those activities required to fund the planning, design, development, operation, maintenance and betterment (improvement) of Government water schemes and schemes to be funded by water management institutions.

5.3.2.1 Government water schemes

Water resource development costs (i.e. capital costs)

In terms of section 56 (2)(b) of the National Water Act, 1998, water resource development costs can include the related costs of investigation, planning, design and construction of water schemes, which constitute the capital cost of projects. The most significant departure from the financing methods used by the DWAF in the past can be found in the treatment of capital costs, which are different from all other costs. This is because long term capital investments, such as water schemes, often have a life which extends beyond a financial year. Three common financial approaches can be used for determining the capital portion of the unit cost of water; they are the "*funding*" approach, the "*depreciation*" approach and the "*rate of return*" approach.

- **Funding approach.** The basic feature of the funding approach is that revenues should be sufficient to cover debt service obligations (interest charges) and the redemption of loans. The funding approach has been historically used by DWAF and is generally more easily understood in the public sector because of the cash-oriented budgeting and accounting system traditionally used by this sector. This method was based on so-called "notional loans", where it was assumed that the State raised loans to fund schemes and that these "loans" then had to be repaid through water use charges.
- In the **depreciation approach**, asset values (composed of water infrastructure assets and other fixed assets) are depreciated over their useful economic lives. Depreciation is normally calculated on a straight-line basis over the life of the asset. In an inflationary environment, it is prudent to depreciate assets on the basis of current replacement cost. Depreciation cost recovery is used to ensure sustainable water supplies from existing assets.
- The **rate of return approach** allows for fixing a charge to earn a specific rate of return on either the total capital employed (fixed assets base or total assets) or the total financial investment used to finance facilities to supply water. The rate of return should be based on the social opportunity cost of capital to government and this should approach a level sufficient to fund the annual cost requirement of providing new assets. Typically, this approach would be applied in conjunction with depreciation accounting.

In assessing these three approaches, it is important to note that the current DWAF accounting policy is in line with the "*funding*" approach, namely on a cash basis with strict cost controls against budget. Fund accounting is not consistent with

Generally Accepted Accounting Practice (GAAP), and is not favoured by organisations dependent on external investors and lenders. The Public Finance Management Act, 1999 requires State financing to adapt to GAAP. Moreover, the funding approach is problematic in water-scarce countries in that unit costs will decrease when loans have been repaid.

The first tier pricing strategy for Government water schemes set out in this document is based on the "*rate of return*" approach, which is applied together with depreciation. The reasons for this are as follows:

- First, depreciation is a real part of the cost of water infrastructure, in that it represents the loss in value of existing facilities, not restored by current maintenance, that occurs due to wear and tear, decay, inadequacy, and obsolescence. The depreciable portion of the development costs of assets constitutes the replacement cost required when the scheme reaches the end of its useful life.
- Second, the **return on assets** is intended to provide a fair rate of return on the total capital employed by Government to finance the development of water infrastructure. This will ensure financial sustainability of schemes constructed by DWAF with funds provided by the Exchequer, and equally important, that the true cost of water is paid by users.

Thus, in order to recover water resource development costs, the capital component of the unit cost of water supplied from Government water works will be determined by a depreciation charge and a return on assets charge.

Depreciation

Depreciation is defined as the systematic allocation of the depreciable amount of an asset over its useful life and will be applied as follows:

- Depreciation will be applied on a straight line basis, which means that the depreciable amount will be allocated in equal amounts over the useful life of the assets.
- The depreciable amount will be the annual depreciable portion of the depreciated replacement value, which will be determined in accordance with a revaluation policy whereby water resource assets will be periodically re-valued. Initially, calculations will be based on the figures produced during the investigation into the inventory of assets and financial information relating to Government water schemes which was initiated in 1998.
- Full technical revaluations will be carried out in intervals not exceeding 10 years. The remaining useful lives of assets and the depreciable portion will also be reassessed during the revaluations. In the intervening years, desk-top re-valuations will be carried out annually and will apply the average October to September producer price index (PPI) to the asset values and thus to the annual depreciation amount.

- The depreciable portion and useful lives over which the asset will be depreciated must be determined by qualified engineers and for purposes of initial price-setting, are in accordance with the table below. The technical revaluations will also be determined by qualified engineers.

The depreciable portion and useful lives listed in the table relate to new water resource asset components and could change with each re-estimate. The annual depreciation cost of existing assets could therefore also adjust with each re-estimate and will be based on the re-estimated remaining useful life.

Component	Depreciable Portion (%)	Estimated Total Useful Life (years)
Dams & weirs	10	45
Reservoirs	100	45
Canals	40	45
Tunnels	10	45
Pump Stations	40	30
Syphons & concrete pipelines	30	45
Steel pipelines	75	30
Water Treatment Works	30	45
Buildings	100	40

Return on Assets

This component of the charge will be determined by applying an average percentage to the current depreciated replacement value of water infrastructure assets. This will be done with a view to generate capital to fund the annual cost of planning, design and construction of new and augmentation schemes or demand management measures. The percentage return will be determined in consultation with the Department of Finance on the real long term cost of capital to Government. A figure of 4% has been suggested as being an appropriate rate to meet the projected long term growth in demand for raw water supplied from Government water schemes. This approach assumes that the marginal unit cost of new schemes will equal the average unit cost of existing assets, revalued at current price levels. Although it can be argued that the cost of new schemes would be higher than the replacement cost of existing schemes due to the fact that the cheaper dam sites have been exhausted, it is also true that demand management can reduce demands and thus the annual capital cost requirements. These two opposing influences are assumed to balance out.

This component of the charge will be set on a scheme-related basis, but will be applied only to those sectors with increasing demands. These sectors have been identified as the local government, industrial, mining and energy sectors. Investigations into the historic growth in demand of these sectors have confirmed that application of an average annual rate of **four percent** to the depreciated replacement cost of the relevant State water infrastructure assets would achieve a breakeven return.

Setting of water resource development charge

The new approach to determine the capital cost component of water supplied from Government water schemes, consists of two components, i.e. the depreciation and return on assets charges, which will be determined by dividing allocated annual costs by the expected water sales.

Depreciation of assets on a straight line basis will result in constant real term annual costs between intervals of revaluation of assets, to which the PPI can be applied as inflator. The depreciation charge will thus not be subject to sudden variations and will give rise to smooth sectoral charges.

As far as the return on assets component of the charge is concerned, it is important to note that the strict application of a constant rate to the depreciated replacement value of water infrastructure would give rise to declining financial returns over time in real terms (i.e. the depreciated replacement value of an asset is lower in year 2 than year 1). The resulting annual return on assets charges determined in this way would also lead to significant hikes in tariffs when asset components of a scheme reached the end of their useful lives and had to be replaced, thus restoring the asset value and increasing the return on assets above that of the previous year.

In order to avoid spiked tariffs, it will be necessary on a scheme-by-scheme basis to establish equalised return on assets values which are constant in real terms. Such an "average" return will be calculated over a 45 year period for all asset components making up the scheme or system. Between the periodic revaluation of scheme assets, the equalised annual return on assets value, plus the annual depreciation cost, will be inflated by the PPI for purposes of setting smooth water resource development charges.

Pre-financing (Section 56 (2)(b)(iii) of the Act)

The return on assets charge caters for financing the development cost of new schemes and could thus be used to finance the cost of development of augmentation schemes prior to the delivery of water. The return on assets charge will thus be utilised to finance the annual costs of planning feasibility studies for committed augmentation schemes.

A unique developmental situation may occur where a large augmentation scheme is planned and executed, but for certain reasons the infrastructure did not become State property and the construction expenditure has to be financed by the established water utility from payments from water users from the existing Government water scheme before water is delivered into the system by the augmentation scheme. This is the situation in the case of the Lesotho Highlands Water Project Phase 1A, which was built to augment the Vaal River System and where expenditure required to service the loans obtained by the TCTA to build the scheme was and continues to be recovered from the Vaal River System water users. This was done to ensure a smooth price setting process in the long term and the avoidance of sudden and significant hikes in water prices.

In future the return on assets revenue obtained from current Government water schemes must only be used to fund state-owned augmentation schemes, but payment

for the expenditure incurred for schemes owned by other institutions, such as the LHWP Phase 1, will have to continue to be recovered by additional charges to water users in the relevant system.

Assurance of Supply (Section 56 (4)(b)(iii) of the Act)

In determining tariffs of multi-purpose waterworks, it will be necessary to consider the level of assurance at which water is supplied to the various users in order to allocate capital costs between different users. Users that require a higher assurance of supply, for example, would have to pay a premium for their water allocation relative to those users who require a lower assurance of supply. This will be effected in the following way:

- Water resource development costs of dams will be allocated in proportion to the long term estimated average annual use of water allocations to the different users/sectors, thus bringing into contention the differential imposition of water restrictions during droughts.
To accomplish this strategy, sophisticated hydrological risk analyses should be conducted for all State dams and the levels of assurance negotiated with users. In the mean time, the long term average annual use of the various user sectors will be considered to be the following percentages of sectoral allocations on Government water schemes:
 - ◆ Irrigation sector — 91% (100% for 70% of the time and 70% for 30% of the time);
 - ◆ Municipal sector — 97% (100% for 70% of the time and 90% for 30% of the time);
 - ◆ Strategic industrial sector, e.g. Eskom, Sasol — 100% (no water restrictions would normally be imposed).
- In the case of conveyance structures, the division of capital costs will be done in proportion to the required peak rates of supply to the various sectors.

Treatment of Reserves

When the new pricing structure has been phased in, the depreciation and return on assets charges will result in reserve funds theoretically being built up over time. However, as long as Government water schemes are owned by the State, these reserve funds will revert to the Treasury, either indirectly by reducing the annual augmentation of the Departmental Trading Account from Treasury funds, or directly as a result of annual surpluses on the Trading Account flowing to the Treasury. Thus, the DWAF will be in a position to finance capital cost requirements for depreciation on specific schemes from its general revenue base on the Trading Account and to finance the development of augmentation schemes from Exchequer budget allocations. DWAF will establish an accounting system to record the extent and use of these funds.

Use of waterworks costs

These are the costs, both direct and indirect, that are incurred in the operating and maintenance of Government water schemes. These are broken down between direct and indirect scheme costs.

- **Direct Scheme Costs**

These are the fixed and variable costs which can be attributed directly to administering, operating and maintaining schemes. Direct costs include administration costs, operating and maintenance costs, pumping costs, direct labour and overheads and distribution costs.

- **Indirect Scheme Costs**

These are the costs which cannot be directly attributed to a specific scheme, but which contribute towards the management of the water resources of the entire water management area, and comprise the DWAF regional office costs, a portion of which can be allocated to individual schemes using an equitable allocation base. Timebased costing will be used to separate overheads allocated to schemes and those related to water resource management.

Implementing a charge to fund water resource development and use of waterworks on Government water schemes

The DWAF has created three separate trading accounts for:

- Bulk supply schemes (which could eventually be transferred to water management institutions)
 - Integrated systems (national water infrastructure)
 - Water services schemes (to be eventually handed over to local government).
- The pricing strategy as set out here regarding funding of water resource development and use of waterworks, is not applicable to these schemes.

Water resource development and use of waterworks charges will be implemented as follows:

- All Government water schemes or integrated systems and their supply areas will be identified and taken up in the relevant trading account.
- Cost information relating to the water infrastructure assets will be determined. This includes the evaluation of current and depreciated replacement values for each component of the schemes, as well as the expected remaining useful life thereof. Capital costs of new State-funded schemes will include the cost of project planning, design and construction. Direct and indirect costs relating to use of waterworks will be determined as part of the annual budgeting process.
- The water allocations to various user sectors and the long term estimated average annual use based on assurance of supply will be determined for cost allocation purposes.

- The expected annual water sales volume per user sector per scheme will also be determined as part of the annual budgeting process for the next financial year.
- An assessment will be made of the quantities of raw water to be provided free of charge in terms of the procedure prescribed in 7.2.
- Based on the above information, annual costs will be determined and allocated to user sectors. This will allow the determination of unit costs and thus charges per sector per scheme. The bases for determining and allocating the different costs are as follows:
 - ◆ Division of capital costs between sectors — costs of dams will be divided in proportion to the long term estimated average annual sectoral use (i.e. economic use) of allocations, thus taking account of assurance of supply. The cost of conveyance structures will be divided in proportion to the peak rates of supply of maximum sectoral allocations.
 - ◆ Depreciation — Capital cost allocations (as above) to different sectors will be depreciated as described above to determine the annual depreciation component per sector.
 - ◆ Return on assets — The methodology described above to determine the real term average annual return on assets based on 4% of the depreciated cost allocations, will present the relevant cost component per sector. The sectors involved are the water services authority, industrial, mining and energy sectors.
 - ◆ Direct use of waterworks costs — Sector-specific costs will be allocated directly to the relevant sectors. The cost of joint works will be shared pro rata to the estimated annual sectoral water uses.
 - ◆ Indirect use of waterworks costs — Indirect costs which have been allocated to the schemes will be further allocated to the different sectors using an equitable time-based allocation base.
- Once all costs are determined and allocated to sectors and expected consumption values per sector have been determined, unit cost charges per sector for each scheme or system can be determined. The principle of equalising system charges in cases where more than one augmentation scheme per sector is involved, as currently applied in certain cases, will be adhered to. Each sectoral charge will consist of two components, i.e. the water resource development charge and the use of waterworks (O&M) charge.
- In determining the water use charges per sector, a differentiated subsidy policy will be applied. This simply means that the full financial cost will not be recovered initially from all sectors. Standing agreements with representative bodies will be adhered to and the new charges will be phased in progressively from current levels within sectoral constraints. Proposals in this regard are described in more detail in part 7 below.
- Billing to water users on schemes will be based on the sectoral charge and the irrigation quotas and for other sectors on the measured quantity of water actually used or by agreement in the case of integrated systems. For major water users such agreements could include the payment of fixed monthly

amounts and variable amounts based on water actually used. For irrigation schemes block rising tariffs within the quotas are envisaged. This will provide incentives to conserve water.

5.3.2.2 Schemes funded by water management institutions

- Catchment management agencies and water user associations must, when determining their revenue requirements on which water use charges for development and use of waterworks are based, take into account:
 - (a) recovery of overheads, operations and maintenance costs;
 - (b) recovery of capital costs and the servicing of loans (water management institutions are entitled by the Act to raise loans to finance new water supply infrastructure, and should therefore be able to service these loans through cost recovery);
 - (c) reasonable provision for the depreciation of assets, which can be placed in a reserve fund for utilisation at the appropriate time;
 - (d) other charges levied by law on the institution and in terms of this pricing strategy; and
 - (e) the financial targets included in its business plan.
- Charges levied by water management institutions may be levied on a proportional or differential basis, depending on the provisions of the association's constitution, or if directed so by the Minister to give effect to the provisions regarding the rendering of financial assistance in terms of sections 61 and 62 of the Act.
- A catchment management agency must, when considering charges for raw water supplied from a storage dam owned and funded by the agency, provide for:
 - (a) subsidising basic human needs in accordance with 7.2(1) of this strategy; and
 - (b) differences in assurance of supply of user sectors on an equitable basis.

5.3.3 Achieving the equitable and efficient allocation of water

It is important to note that the proposals regarding the funding of water resource management and water resource development and use of waterworks that have been described above will make a significant contribution towards achieving the equitable and efficient allocation of water.

However, in the context of increasing water resources scarcity, it may be necessary to introduce additional **economic incentives** in order to optimise the allocation of scarce water resources between competing uses. Such economic incentives could be introduced in water-stressed areas; the objective being to shift water use from low to high values.

This charge may only be introduced by DWAF on a regional or national basis and the revenue will accrue to the Treasury. If it were deemed necessary to introduce economic incentives in water-stressed areas, this could be achieved administratively via an explicit charge or via market-orientated mechanisms.

- **Administrative mechanisms.** An administratively determined *economic* charge could be introduced in areas where water is used predominantly for low-value purposes. Such a charge would be over and above the charges for water resources management and development referred to above. The basis for determining the economic charge will be the opportunity cost of water as reflected in transactions taking place between water users. This charge will not exceed the marginal cost of the next scheme and should be ideally based on the market-clearing level in each area. Due to the fact that State water infrastructure assets would in future be priced at their current or marginal costs, the economic charge would not be applied to users of Government water schemes on whom the return of assets charge was imposed. The return on assets charge could thus be used as a proxy for the economic charge at Government water schemes.
- **Public Auction.** This method could be followed in areas which are under water stress (Chapter 4, part 8 of the Act) and for which compulsory licences have been issued. The issuing of new permits for any remaining water could be effected through a bidding or tendering process for certain catchment or sub-catchment areas. The highest bids or tenders would be awarded the available permits at a price equal to the lowest bid above the cut-off, or, in other words, at the price that clears the market by allowing users to take up the entire available supply. The price established in this manner should be an efficient and economic price for water in that particular area and for the specified water use. The scarcity value of water would now be implicitly reflected in the bids that are made by competing water users.

Prospective permit holders would thus compete with each other for entitlements, facilitating a move away from the administrative setting of first tier prices towards a market-oriented approach to price determination. The public auction concept stops short of making provision for a fully-fledged water market in that the permits representing water use entitlements would not be traded freely among competing water users.

- **Water Markets (Sections 25 and 26(l) of the Act).** Tradeable water use entitlements will promote the shift from low to high value use of water and may obviate the need for administratively set prices in the water-stressed areas where there is an increasing water demand. The advantage of making a water use entitlement tradable, is that it allows for a more efficient user to buy the entitlement from an existing, but less efficient, holder of the entitlement.

The National Water Act, 1998 provides for trading in water use entitlements. The Act recognises, however, that while the trading of entitlements between uses may optimise the economic use of water, they may in turn impose considerable external costs on the rest of the local economy. Thus, trading in water use entitlements would have to be subject to some form of control to protect the public interest as opposed to the interests of the contracting parties. The necessary regulations in terms of section 26 (l) of the Act must first be made.

5.4 Transparency and Accountability

In establishing the pricing strategy, every attempt must be made to control costs by the application of sound financial management principles such as strict budgetary control. The new pricing strategy embraces the principle of transparency, which of itself should promote cost control. In terms of this principle, the forthcoming year's sectoral charges that are developed during the budgetary process for each water management area will be forwarded to regional offices for dissemination and discussion with interested parties. Final sectoral charges will then be formalised and made available to the regional offices for re-distribution to the area offices, prior to the commencement of the financial year.

In addition, a summarised version of the budgeted trading accounts for the forthcoming year, detailing estimated deficits and surpluses of accounts, will be made available at the regional offices for discussion with the representative bodies of stake-holders, prior to the commencement of the financial year. Similarly, after financial year end, summarised trading accounts reflecting actual expenditure and revenue compared to budget expenditure and revenue for the year, will be made available at the regional offices. CMAs must introduce similar accounting practices.

6 PHASING IN THE NEW APPROACH

6.1 Introduction

The starting point for the phasing in of the new pricing strategy is the recognition that there are fundamental differences between water use charges for a) funding water resource management, b) funding water resource development and use of waterworks, and c) achieving the equitable and efficient allocation of water.

It is important to note that while both water resource management and water resource development and use of waterworks charges reflect financial costs, there is a logical difference between the two which requires that they be separated. Water resource development and use of waterworks charges are only levied on the users of specific government water schemes or systems, and schemes funded by water management institutions and are based on the costs associated with those schemes. Water resource management charges, on the other hand, relate to all water utilised within the water management area and should, therefore, be charged to all water users, irrespective of whether water is provided from a water scheme or not.

Finally, when introduced, a charge for achieving the equitable and efficient allocation of water would reflect not a financial cost, but rather an economic one, the objective of which would be to provide incentives for water to be allocated to those who value it highly. Like the water resource management charge, such a charge would be area-specific and would apply in water-stressed areas.

It is clear from the above that a fundamental principle underlying the proposed pricing strategy is that eventually it should apply to all water, not just that which is currently supplied from government water schemes.

6.2 Phasing in the Various Charges

The phasing in of the proposed water pricing strategy will have to be structured so as to follow the phased implementation of the National Water Act, 1998. The process for phasing in can be summarised as follows:

Water Resource Management Charges

The introduction of water resource management charges will have to proceed more slowly than the introduction of water resource development and use of waterworks charges (see below), as the registration of water use in water management areas is a prerequisite for its full implementation. The current situation is that catchment management charges relating to the water resource management functions of water conservation (invasive plant and water weeds removal) and water utilisation (abstraction, storage and afforestation permit control) have already been introduced for water users at certain Government water schemes. Registration will be prioritised in the water management areas containing the catchments of those schemes so that all water users can be charged in an equitable way.

Water resource management charges will be introduced as soon as the greatest part of existing water use in priority water management areas has been registered.

Water Resource Development and Use of Waterworks Charges

The phasing in of full financial cost recovery for water sold from government schemes can be introduced more rapidly, as the users thereof are easily identifiable. This will have to be done bearing in mind standing agreements with specific user groups and adaptability constraints (See part 7 below).

Charges for Achieving the Equitable and Efficient Allocation of Water

As already mentioned above, charges relating to the funding of water resource management and water resource development and use of waterworks will make a significant contribution towards achieving the equitable and efficient allocation of water. On Government water schemes, the return on assets charge will be used as an economic incentive to conserve water, by introducing stepped tariff structures. Thus, the introduction of additional economic incentives will not feature soon. The

reason for this is that it is acknowledged that it would be premature to introduce economic pricing before the effect of full financial costing of water on resource utilisation has been evaluated.

The introduction of a charge to achieve the equitable and efficient allocation of water will proceed as follows:

- In water-stressed areas where compulsory licensing has been accomplished, any remaining water that can be allocated, may be priced through the public auction process described in 5.3.3.
- The setting of an economic charge in an administrative way, based on the opportunity cost of water, would only be considered from the date when the period of compulsory licenses in water management areas has expired.

To promote the beneficial use of water, DWAF will also regulate the trading of water use between individuals.

7 APPLICATION OF PRICING STRATEGY TO DIFFERENT CATEGORIES OF WATER USE / USER SECTORS

Section 56 of the National Water Act, 1998 also provides for the pricing strategy to differentiate on an equitable basis between-

- different types of geographic areas (S 56 (3) (a) (i))
- different categories of water use (S 56 (3) (a) (ii)); and
- different water users (S 56 (3) (a) (iii)).

This differentiation is discussed with regard to the main categories of water use / water users in detail below.

7.1 Discharge of Waste

Discharging of waste or water containing waste into a water resource is also defined in terms of section 56(5) of the Act as a water use for which charges can be imposed. It is the DWAF's intention to develop and implement a waste discharge pricing system which will be based on the "polluter pays principle" (PPP) to provide economic incentives to reduce water pollution to the level with the least cost to society as a whole.

The waste discharge pricing strategy will form part of the introduction of charges for achieving the equitable and efficient allocation of water in terms of section 56 (2)(c) of the Act and will be separate from the water resource management charge in respect of water quality management.

A separate project was initiated in 1999 to develop the pricing strategy for waste discharges. It will include the determination of future charges for point and diffuse sources of pollution, based on the "polluter pays principle". This will include

measures to internalise the cost of water pollution, as well as economic incentives and disincentives to promote the reduction of waste discharge. The pricing strategy in this regard will be developed and published for public comment in due course.

7.2 Water Services Authority Sector

1) Free raw water for basic human needs

Section 56 (6)(c) of the Act provides that in setting a pricing strategy for water use charges, the Minister must consider measures necessary to support the establishment of tariffs by water services authorities in terms of section 10 of the Water Services Act, 1997 and the use of lifeline tariffs and progressive block tariffs.

In terms of this pricing strategy for raw water use charges, the above requirement will be accomplished by providing the raw water requirement for basic human needs (defined as the essential needs for drinking, food preparation and personal hygiene which is put at 25 liters per capita per day) free of charge to water services authorities. The main objective of this strategy is to promote the introduction of differential lifeline tariffs at third tier by ensuring that the first step of a progressive block tariff structure to provide for the basic needs component for local government domestic users, will exclude the raw water charge or portion thereof, as determined in terms of Chapter 5 of the Act.

The raw water pricing strategy provides that the cost of water at the resource for meeting basic human needs in the areas of water services authorities be borne by the "economic users" of the relevant water management area, system, or government water storage works. This includes the use of water above the basic needs component in local government areas.

The implication of this provision contained in this raw water pricing strategy is that the cost of water ex source for basic human needs will not be cross-subsidised within the water services authority sector alone, but by all user sectors within a specific water management area, State scheme or system. This will lead to increases of the sectoral raw water charges that will be applicable if the basic needs component is not provided free of charge.

In order to calculate the relevant sectoral raw water charges to be imposed in each water management area, system or scheme, information must be readily available on the annual basic needs requirement of each water service authority. This information can be obtained from water service development plans (WSDP) prepared i.t.o the Water Services Act, 1997, but should also be subject to verification. The prescribed procedure to access free quantities of raw water will ensure that realistic estimates of basic needs requirements are provided and also that no raw water will be supplied free of charge before the relevant local authority has committed itself towards implementing lifeline tariffs.

The following procedure is prescribed for implementing the abstraction / supply of free raw water by/to water services authorities:-

- Water services authorities may apply to the responsible authority in writing for the free raw water allocations from water resources or State storage dams after

they have submitted the information contained in the draft WSDP required under section 13 of the Water Services Act, 1997. Particular information that must be provided with the application is the following:

- Domestic user population (permanent residents only) and expected growth rate.
- Total annual water use and expected growth rate.
- Detail regarding the yield of own sources and the expected annual supply from any State storage dam or system.
- Written declaration of intent of the introduction of lifeline tariffs i.t.o the Water Services Regulations.

The application must be routed through and supported by the relevant second tier bulk supplier or Water Board where applicable, which must be responsible to coordinate the applications.

- The responsible authority will then determine the first annual quantity of raw water that must be passed through free of charge to the relevant water services authorities. In cases where a bulk supplier or water board and/or the local authority have own sources and supplementary water is supplied from a State dam or system, the quantity of free water will be determined as that portion of the basic needs requirement that has to be supplied from the State dam or system, which will be based on the percentage that the required supply from the State dam or system makes out of the total annual demand.

Information regarding possible free quantities of water and current raw water tariffs will then be conveyed by the responsible authority to the relevant water services authority with the request to:

- (a) set tariffs in accordance with the Tariff Regulations for Water Services to be promulgated in terms of section 10(1) of the Water Services Act, 1997 and
- (b) reduce the tariff of the first block of the rising block tariff structure for households to contain the subsidy provided by the free water allocation.

- The resulting block tariff structure must then be submitted to the responsible authority for approval of the free water allocation. Compliance with rising block tariff structures as required in terms of the regulated norms and standards set by the Minister in terms of section 10(1) of the Water Services Act, 1997 is a precondition for a free raw water allocation. The essence of the strategy will also be reflected in the said water services regulation.
- Only those water services authorities which have applied for free raw water supplies for basic needs will be considered for such purposes and the relevant free quantities for these authorities and resulting sectoral charges for the rest of the water management area, scheme or system will be published annually when the charges are formalised.
- Auditing will take place through information required to be provided by water services authorities in terms of the regulations to be promulgated under section 9 of the WSA, 1997.

- Where water boards or other bulk water suppliers are involved, the relevant body will receive the bulk allocation of free raw water, which must be passed on to the qualifying local authorities.

The principle of subsidising the basic human needs component of domestic water use in the areas of water services authorities will apply to charges to recover water resource management costs and also charges related to the development and operation of State dams and future dams to be owned by Catchment Management Agencies.

2) Water resource management charge

The current method of determining catchment management charges for water supplied from Government water schemes — relating to the estimated proportional activity costs of water conservation (invasive plants and water weeds removal) and water utilisation (abstraction, storage and afforestation permit control) — is consistent with the new strategy and will be continued. However, adaptations will be made after the registration of all water users in the particular catchments has been accomplished and more accurate data on sectoral water use becomes available (currently the extent of water use in the relevant catchments is based on estimates).

Charges for the full recovery of the other allocated water resource management costs in terms of 5.3.1 will be introduced once the majority of the water users in the particular water management area in which the scheme is located have been registered. Water resource management charges for the water services authority sector will also reflect the fact that only the “economic” uses of water from the water management area, scheme or system will contribute towards cost recovery (i.e. excluding basic human needs).

3) Water resource development and use of waterworks charge

This charge will be based on the method described in 5.3.2. The determination of unit costs for water supplied from Government water schemes, based on the notional loan approach, will be replaced by determining the unit costs through the proposed new approach (depreciation and return on assets) as set out in this strategy. The principle of excluding the water requirements for basic human needs for purposes of setting 1st tier prices will be introduced as described in 1) above. This charge will be introduced from April 2000.

A maximum increase equal to the producer price index (PPI) + 10% over current tariffs for the first number of years of the new pricing strategy will be implemented. In the change-over from current to new water use charges no reduction of charge levels shall take place. The objective is to reach the target charges within ten years. Thereafter, annual tariff increases will be limited to the inflation rate (PPI).

7.3 Industrial, Mining and Energy Sector

The application of the first tier pricing strategy to this sector will be identical to that of the water services authority sector, except for the aspect of dealing with basic human needs. The introduction of the water resource management charge will be based on full financial cost recovery by charging for “economic” uses of water

in the water management area and will be implemented after registration of water uses in the area. The water resource development and use of waterworks charge will be subject to increases of the PPI + 10% over current tariffs for the first number of years from April 2000 onwards. The objective is to reach the target charges within ten years. Thereafter, annual tariff increases will be limited to the inflation rate (PPI). Tariffs will not be reduced below the level of the previous year.

7.4 Irrigation Sector

Established schemes and commercial farmers

1) Existing agreement with SAAU

Negotiations were concluded in 1995 with the South African Agricultural Union (SAAU) on a strategy for tariffs to be imposed on State irrigation schemes. This strategy was based on the following principles:

- Full recovery of operation and maintenance (O&M) plus catchment management costs, plus
- a surcharge on the above costs to counter under-recovery during droughts, plus
- an agreed upon amount to cover future replacement, betterment and drainage works costs. Prior to the construction of any betterment or drainage works, negotiations regarding the repayment would have to be carried out on an ad hoc basis with the respective Advisory Committee or Irrigation Board.

To give impetus to implementation of the strategy, it was further agreed that tariff increases would be gradually and uniformly effected from 1996/97 onwards on the following basis:

- The full recovery of annual operating, maintenance and current drainage/betterment costs, plus a 10% surcharge had to be reached within 5 years at each scheme, i.e. by the end of the 2000/2001 financial year.
- The following catchment management costs would be added to O&M costs: abstraction and storage control, afforestation permit control, the Working for Water Programme (subsidised by 90% as a result of subsequent representations to the Minister) and water weeds control.
- Increases for 1996/97 would be based on one-fifth (20%) of the difference between the estimated 1996/97 costs plus 10% and the 1995/96 tariffs. For the following four years, the increases would be based on one-fourth, one-third, half and full recovery of the corresponding differences between costs and tariffs as recalculated annually.
- On schemes where the current tariffs already exceeded the following year's costs plus 10%, tariffs would remain at the current level.
- A maximum annual increase of 50% on the current tariffs would apply.

2) Water resource management charge

Full recovery of water resource management costs must be achieved in a phased approach. The agreement reached with the South African Agricultural Union (SAAU) makes provision for the allocated costs for the Working for Water Programme (water conservation) to be subsidised by 90% due to the fact that this

activity will only increase the assurance of supply to this sector and will not make additional allocations possible. The catchment management activity costs relating to water conservation (invasive plant and water weed control) and water utilisation (storage, abstraction and afforestation permit control) which have already been introduced, plus a 10% surcharge (to account for under-recovery of costs during drought years), will be phased in together with operation and maintenance costs, to be recovered in full by March 2001. Thereafter the other water resource management costs in terms of this strategy will also be introduced for water pricing purposes, but only after the majority of water uses in a particular water management area have been registered.

3) Water resource development and use of waterworks charge

In line with an agreement between the DWAF and the SAAU, described in 1) above, all management, operating, maintenance and current refurbishment costs, together with certain water resource management costs plus a 10% surcharge, will be recovered in respect of existing Government schemes by March 2001, by gradually phasing out the subsidy over a five year period. The agreement also makes provision for the full recovery of future refurbishment and betterment costs. This agreement will be reviewed before April 2001, from which date the introduction of a depreciation charge on existing schemes, in line with 5.3.2 of this pricing strategy, will be considered. This depreciation component will replace the obligation to pay for the future replacement, betterment and drainage costs in terms of the current agreement.

It is not DWAF's policy to develop new Government irrigation schemes. Where a storage dam scheme is developed for other purposes and established irrigation farmers will benefit by an increased assurance of supply, the full operation and maintenance costs will be payable. New farmers would only be given access or existing farmers allowed to expand on condition that the full financial cost (O&M plus depreciation plus return on assets) would be payable for such new development.

4) Phasing in of charges

Total existing tariffs will be increased gradually to reach full recovery of the SAAU negotiated costs by March 2001. The maximum annual increase of existing tariffs will be limited to 50% of the previous tariff during this period. Tariffs would also not be decreased in any year. From April 2001, the other water resource management activity unit costs for water resource management and a depreciation component of water resource development costs should be added to the charge. Terms of a new agreement will be negotiated in this regard with the full spectrum of organised irrigation agriculture (not only the SAAU).

Ex-homeland schemes and emerging irrigation farmers

In redressing the imbalances with respect to irrigation farming in the past, it should be noted that the State is committed to supporting disadvantaged individuals and communities through land restitution, land reform, or other programmes of corrective action. These could include concessionary periods during which the full cost of water, based on the approach proposed in this document, is not levied. A phasing-in period of 5 years for catchment management plus the use of waterwork

charges on State irrigation schemes is proposed, in order to bring the strategy in line with current practice on established schemes.

The following strategy will be applied to the pricing for ex-homeland irrigation schemes and emerging farmers given access to established or new government water schemes:

- Betterment costs at ex-homeland government water schemes supplying emerging farmers of the historically disadvantaged groups must initially not be taken into account for pricing purposes. The reason for excluding these is that most of the government water schemes in the former homelands are in a highly dilapidated state due to years of neglect of maintenance. The catchment management and operation and maintenance costs plus a surcharge of 10% as contained in the agreement with the SAAU, must be phased in over a period of five years, starting with one-fifth of such costs in the first year after registration or licensing of the emerging farmers.
- For new farmers of the historically disadvantaged groups, who are given access to established or new government water schemes, there must be a phasing in of the full cost recovery of the same costs allocated to established farmers in terms of the negotiated agreement with the SAAU. This must also be over a five-year period, commencing after registration or licensing.
- Future negotiations to be conducted with the SAAU before 2001 regarding the implementation of a depreciation charge must also include representation by representative bodies of these emerging farmers. The further phasing in of the full charges in terms of the raw water pricing strategy must then be done over the same number of years for both the commercial and emerging farmers, but staggered in time due to different commencement dates.
- Established commercial farmers of the historically disadvantaged groups, whose existing irrigation development will be stabilised by any new State storage dam built for other purposes, will be liable to pay the water resource management charges, as well as the operation and maintenance cost of the dam, without subsidies.

Registration of irrigation water use for pricing purposes

An existing lawful water use as defined in section 32 of the Act, can continue to be exercised until the responsible authority requires that water use be licensed. As the extent of existing lawful use has in many cases not been quantified by means of the authorisations granted in terms of legislation which was in force immediately before this Act came into effect, the Act empowers the responsible authority to record the extent of such existing lawful use by means of a registration process, subject to regulations made under section 26 (1)(c) of the Act.

The necessary regulations to guide the registration of existing water use will be promulgated. These regulations will enable the DWAF to register existing lawful use in all water management areas from October 1999 in order to facilitate the effective allocation and management of water use and waterworks and the imposition of charges as set out in the pricing strategy. In terms of section 59 (2)

of the Act, any person registered in terms of a regulation under section 26, or holding a license to use water is liable for water use charges.

For pricing purposes, irrigators not supplied from waterworks owned by the Government or water management institutions, must be registered for their estimated average annual volumetric water use, which will be based on the crop water requirements of those crops and irrigated areas which constitute their registered existing lawful use and the estimated water losses incurred by their registered on-farm irrigation systems. On Government or WUA schemes, the water use on the scheme will be registered as a unit and will be based on the sum of the individual volumetric allocations at field edge, adapted for assurance of supply to represent long term average annual use, plus average annual distribution losses on communal infrastructure.

The following methods will be used by DWAF to determine the volumetric extent of average annual water use of individual irrigators for pricing purposes, based on information provided on the official registration application forms:

- **Irrigation requirement:**

The annual irrigation requirement (the amount of water to be distributed onto the soil surface) is calculated by subtracting the average annual effective rainfall (that part of the rainfall that effectively replaces irrigation) from the average annual crop water requirement (the minimum quantity of water necessary for optimal plant growth for the specific crop at the specific location).

The following procedure will be followed to calculate the crop water requirement:

The SAPWAT computer program currently being developed under the auspices of the Water Research Commission, using the internationally accepted Penman-Monteith climatic model for crop water requirements as developed by the FAO, plus the effective rainfall for different crops at 350 weather stations country-wide, will be used for estimating the irrigation requirements for those crops noted in the program, anywhere in South Africa. The weather station with climatic characteristics nearest to those experienced on the specific farm will be chosen and for crops not noted in the program, a crop with more or less similar characteristics will be chosen in the model.

- **In-field irrigation losses:**

The irrigation system used does have some built-in losses that must be added to the irrigation requirement to be able to establish the total quantity of water used.

The following system efficiencies (which accounts for losses between the farm dam and where water is placed on the soil surface) as given in the "*Irrigation Design Manual*", 1996, produced by the Agricultural Research Council, will be used:

Irrigation method	System efficiencies
Flood : Furrow	65%
Flood : Border	60%
Flood : Basin	75%
Sprinkler : Dragline	75%
Sprinkler : Quick-coupling	75%
Sprinkler : Permanent	85%
Sprinkler : Hop-along	75%
Sprinkler : Big gun	70%
Sprinkler : Side-roll	75%
Sprinkler : Boom	75%
Sprinkler : Travelling gun	75%
Sprinkler : Travelling boom	80%
Centre pivot	85%
Linear	85%
Micro sprinkler	85%
Micro spray	90%
Drip	95%

- **Irrigation management:**

If no irrigation scheduling or any other method to improve irrigation efficiency is used, the management of the specific irrigation system is not optimal and a further quantity of water is lost. A quantity of 10% of the total use will then be added.

Stepped water tariffs

To promote water conservation and the beneficial use of water in terms of the National Water Act, the introduction of stepped water tariffs for irrigation will form part of the pricing strategy. The present agreement with the SAAU regarding the phasing-in of the recovery of current expenditure at schemes may lead to under-recovery of costs if stepped tariffs are introduced immediately, and such an immediate introduction may therefore be counterproductive. The introduction of stepped tariff structures also needs further applied research and refinement and can furthermore only be effectively applied where water supply is accurately measured and monitored.

The development of stepped tariff structures to promote water conservation will also form part of the revised agreement to be concluded with organised agriculture, which will be implemented from April 2001.

Government institutions

Water supplied for irrigation purposes from State schemes to other government departments or institutions financially supported by government departments, will be charged a tariff based on full financial cost recovery, without subsidisation.

Purchase of "extra water"

The current policy of allowing scheduled irrigators on Government water schemes to purchase "extra water" under certain conditions at heavily subsidised prices will be discontinued. Only under exceptional circumstances, such as an unexpected heat wave, will irrigators be allowed to purchase additional water over and above the quotas. The tariff for such extra water will be the raw water tariff for domestic and industrial supply.

7.5 Stream Flow Reduction Activities

1) Water resource management charge

In terms of the Act, forestry is declared as a stream flow reduction activity. Existing and new forestry plantations will attract charges for water resource management. Full recovery of allocated water resource management costs in terms of **5.3.1**, based on the total registered average annual volumetric water use, must be achieved for each water management area. The Act makes provision for the DWAF to make a volumetric determination of water to be ascribed to a stream flow reduction activity for purposes of water use allocation and the imposition of charges.

Water resource management charges for stream flow reduction of commercial forestry plantations will be expressed in cents per cubic meter for each water management area and the registered average annual stream flow reduction volume per water user will determine the amounts payable to the responsible authority.

The volumetric determination of stream flow reduction for registration purposes will be based on the outcome of the current stream flow reduction modelling research project conducted for the Department under supervision of a steering committee on which the forestry industry is represented. The results of this research, which is intended to refine existing empirical models, will be available in 2000. The model to be used will be based on the document "*The impacts of timber plantations on runoff in South Africa*" by Le Maitre, Scott and Fairbanks, 1997, taking account of the different species, areas planted, location and resulting moisture availability in quaternary catchments.

2) Water resource development and use of waterworks charge

This charge would not generally be applicable, unless the sector willingly buys in on the construction of storage dams to compensate for stream flow reduction effects.

8 CONCLUSION

This document has presented a resource pricing approach for South African water, based on financial and economic principles, and taking into account the country's social and ecological objectives. It has argued that supply-side approaches to address the problem of water scarcity are all but exhausted, and that an integrated approach, containing also demand-side measures represent the only viable long-run solution to the management of South Africa's water resources.

The new approach to water pricing recognises this, and proposes that the full financial cost of 1st tier water eventually be recovered from water users. Where necessary, this financial charge may ultimately be supplemented by an economic charge in water-scarce catchments, in order to reflect the relative scarcity of water as a commodity at a given time and place and thus to promote the efficient allocation and beneficial use of water.

Finally, it would be premature to assign definite time-frames to the staged phasing-in of full economic pricing in the absence of actual data. However, it is important to remember that the country's scarce water resources are at great risk if the move towards economic pricing is delayed any longer than is absolutely necessary.

9 GLOSSARY OF TERMS

Social equity: In the context of water resources, social equity implies that all user groups have fair and reasonable access to the nation's scarce water resources, and that the allocation of water resources facilitates universal and affordable access to a basic water supply.

Ecological sustainability: This concept captures the view that there is a need to treat ecological protection and continuing economic growth as mutually compatible rather than as necessarily conflicting objectives.

Economic efficiency: A condition that is achieved when resources are used over a given period of time in such a way as to make it impossible to increase the welfare of any person without harming another.

Economic value: The cost that represents the scarcity value of a good which would prevail in competitive markets.

Economics: Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.

Externalities: are essentially activities whose full cost or benefit is not incorporated into an economic decision; hence they lead to sub-optimal social allocation.

Market approach: This is an accepted means through which buyers and sellers can communicate and trade at mutually agreed terms.

Market clearance: A condition that is attained when the price of the good traded adjusts so that the quantity buyers wish to buy is equal to the quantity which sellers wish to supply.

Opportunity costs: The costs of alternatives forgone by using scarce resources in a particular manner.

Polluter pays principle: A principle that ensures that a charge per unit of pollution emitted into the ecosystem is charged to those responsible for such pollution in order to internalise the cost thereof.

Scarcity: The situation which arises when demand for any given good outstrips the supply of that good.

Water market: A market where water is traded in the same fashion as other goods.

NASIONALE WATERWET (WET No. 36 VAN 1998)

INSTELLING VAN 'N PRYSSTRATEGIE VIR WATERGEBRUIKVORDERINGS IN TERME VAN ARTIKEL 56(1) VAN DIE NASIONALE WATERWET, 1998

Ek, Ronald Kasrils, LP, Minister van Waterwese en Bosbou, met die instemming van die Minister van Finansies, stel hiermee in terme van artikel 56(1) van die Nasionale Waterwet (Wet No. 36 van 1998), 'n prysstrategie vir rouwater-gebruik in, soos vervat in die skedule hiertoe.

SKEDULE

'N PRYSSTRATEGIE VIR ROUWATERGEBRUIKVORDERINGS**VOORWOORD**

Die Nasionale Waterwet, 1998 (Wet No. 36 van 1998), het voorsiening gemaak vir fundamentele hervorming van die reg betreffende die beskerming, gebruik, ontwikkeling, bewaring, bestuur en beheer van waterhulpbronne op die grondslag van billikheid en volhoubaarheid as sentrale beginsels. Hierdie beginsels erken ook die behoefte aan die bevordering van maatskaplike en ekonomiese ontwikkeling deur die gebruik van water en die behoefte aan die daarstelling van geskikte waterbestuursinstellings ten einde die doel van die Wet te bereik.

Die Wet verskaf ook die breë beleidsraamwerk ten opsigte van maatreëls vir die voorsiening van waterhulpbronbestuursdienste en die ontwikkeling van waterhulpbronne, asook finansiële en ekonomiese maatreëls ter ondersteuning van die implementering van strategieë gerig op waterhulpbronbeskerming en -bewaring en die voordelige gebruik van water.

Hierdie dokument verskaf 'n strategie vir die implementering van die prysbepaling van die gebruik van rouwater binne die gemelde beleidsraamwerk. Dit is die resultaat van 'n wye raadplegingsproses soos voorgeskryf in die Wet. Belanghebbende partye het tot die finale vorm van hierdie dokument bygedra deur hulle kommentaar, wat deeglik oorweeg is en waarvan die essensie in hierdie dokument geïnkorporeer is, waar dit die waarde van die dokument verhoog het.

Hierdie prysbepalingstrategie vir rouwater is deur Suid-Afrikaners vir Suid-Afrikaanse toestande ontwerp, met erkenning van die feit dat water 'n skaars en oneweredig verspreide nasionale hulpbron is. Ek is daarvan oortuig dat die maatreëls wat aanvaar is, tot 'n billike behandeling van alle sektorale belange sal lei terwyl dit doeltreffendheid bevorder, en dat dit ook sal lei tot die herstel van wanbalanse in die toegang tot water as gevolg van wette van die verlede.

Ronald Kasrils, LP

Minister van Waterwese en Bosbou

- opvanggebiede vervuil is van indringerplantegroei wat meer water as die natuurlike plantegroei gebruik; en
- verlagende watergehalte'n invloed het op die beskikbaarheid van water met 'n geskikte gehalte vir gebruik.

2.2 Faktore wat aanvraag beïnvloed

Aan die ander kant is die **aanvraag na water** in Suid-Afrika besig om toe te neem. Faktore wat hiertoe bydra, is:

- die hoë bevolkingsgroei;
- snelle verstedeliking;
- ekonomiese ontwikkeling;
- aanvraag na basiese dienste en hoër vlakke van diens (bv. binnenshuise water eerder as kommunale staankrane);
- die behoefte aan volhoubare ekologiese stelsels en die rehabilitering daarvan;
- die poging om toeganklike, drinkbare water aan elkeen in die land te voorsien; en
- ondoeltreffende meganismes, insluitende prysbepalingstrukture, om aanvraag te verminder.

3 HANTERING VAN DIE PROBLEEM

3.1 Voorsieningskant- versus aanvraagkant-bestuur

In die verlede was die groeiende aanvraag na water deur verhoogde voorsiening geakkommodeer. Nuwe damme en oorplasingskemas is gebou om hierdie verhogings moontlik te maak. Waterbronne wat die maklikste toeganklik is, sal egter spoedig almal ten volle benut wees, en dit sal nodig word om steeds verder weg na nuwes te soek. Tensy aanvraagpatrone dramaties verander word, sal dit in die toekoms nodig word om water uit buurlande in te voer indien hulle toestem, of om van die ontsouting van seewater gebruik te maak. Hierdie nuwe voorrade sal duur wees en die stygende koste daarvan sal deur alle watergebruikers gedra moet word.

Daar is wesenlik twee maniere waarop die toenemende gaping tussen die aanvraag na en die voorsiening van water vernou kan word. Die eerste behels bestuur aan die **voorsieningskant**, wat bloot beteken dat voorsiening uitgebrei word om in die immer-toenemende aanvraag te voorsien. Ons het hierbo egter te kenne gegee dat dit tot aansienlike stygings in die koste van water sal lei aangesien minder gunstige bronne wat nog verder weg is, ontwikkel sal moet word. Hierdie stygende koste sal uiteindelik van alle watergebruikers verhaal moet word.

Voordat hierdie koste aangegaan word, is dit belangrik om seker te maak dat die water wat reeds beskikbaar is, doeltreffend gebruik en nie vermors word nie. Die beste manier om dit te doen is om **aanvraagkantmaatreëls** te tref vir die bestuur van waterhulpbronne. Deur alle watersektore aan te moedig om water meer doeltreffend te gebruik, voorsien aanvraagbestuur 'n meer volhoubare langtermynoplossing vir die probleem van waterskaarste as voorsieningskantmaatreëls, omdat die waarde van water in verhouding tot die koste van die voorsiening daarvan in aanmerking geneem word en dit sodoende meer as 'n kommoditeit behandel word.

Dit is belangrik om daarop te let dat die fokus op wateraanvraagbestuur nie impliseer dat belangrike voorsieningskant-inisiatiewe, soos opvanggebiedbestuur (en die hantering van water waarvan nie rekenskap gegee kan word nie), in die nuwe benadering tot waterhulpbronbestuur verwaarloos sal word nie. Dit impliseer ook nie dat infrastruktuuropsies nie, waar nodig, nie oorweeg sal word nie. Die optimale oplossing vir die hantering van die probleem is om geïntegreerde waterhulpbronbestuur toe te pas, wat die voorsieningskant- en die aanvraagkantmaatreëls betrek. Aanvraag- en voorsieningskantopsies moet op die grondslag van koste per opsie vergelyk word.

4 OOGMERKE WAT AAN DIE NUWE PRYSBEPALINGSTRATEGIE VORM GEE

Die volgende oogmerke is van gelyke belang by die formulering van die nuwe prysbepalingstrategie:

- Maatskaplike billikheid¹
- Ekologiese volhoubaarheid
- Finansiële volhoubaarheid
- Ekonomiese doeltreffendheid

Daar word hieronder op elke aspek verder uitgebrei. Hierdie oogmerke word in die implementering van die nuwe prysbepalingstrategie, wat in **Deel 5** bespreek word, geïnkorporeer.

4.1 Maatskaplike billikheid

Apartheidbeleide het die verskaffing van watervoorsieningsdienste verwring, sodat in 1994 'n geraamde meer as 12 miljoen mense nie voldoende voorrade drinkbare water gehad het nie. Apartheid het ook 'n bevooroordeelde benadering tot waterhulpbronbestuur tot gevolg gehad, en watertoewysing was nooit bloot 'n ekonomiese aangeleentheid nie, maar 'n sosio-politieke een. Staatswaterbeleid, en in die besonder die verskaffing van subsidies (insluitende dié geassosieer met die voorsiening van besproeiingswater), het gelei tot aansienlike voordele vir groot, hoofsaaklik blanke kommersiële boere ten koste van opkomende swart boere en kleinboere. Die prysbepalingstrategie vir watergebruikvorderings, gekoppel aan die verlening

¹ Tegnieë en ander terme word in die woordelys aan die einde van hierdie verslag verduidelik.

van finansiële bystand, sal maatskaplike billikheid bewerkstellig deur die herstel van wanbalanse van die verlede ten opsigte van gelyke toegang tot watervoorsieningsdienste en ten opsigte van regstreekse toegang tot eerstevlakwater.

4.2 Ekologiese volhoubaarheid

Suid-Afrika is daartoe verbind om 'n pad van ontwikkeling te volg wat omgewingsgewys volhoubaar is. In die geval van water vereis dit dat die beskikbaarheid en gehalte van waterhulpbronne wat toekomstige geslagte gaan erf, voldoende moet wees ten einde mensewelstand en die instandhouding van ekosistels te verseker. As deel van die oorhoofse waterhulpbronbestuur beteken dit dat ons moet toesien dat ons vlakke van waterverbruik, -gebruik en -besoedeling, asook die geassosieerde infrastruktuur vir die opvangs, voorsiening, behandeling en wegdoening van die water, nie onaanvaarbare of onomkeerbare invloede op die bevolking of ekosistels uitoefen nie.

Die volgende beginsels is onderliggend aan ekologiese volhoubaarheid in die waterprysbepalingstrategie:

- Ingevolge Hoofstuk 3 van die Nasionale Waterwet, 1998, moet die waterbehoefte ten opsigte van die doeltreffende funksionering van alle ekosistels beskerm word. Die water benodig vir hierdie doel, verwys na sowel die gehalte van as die hoeveelheid water in die hulpbron en word die **ekologiese reserwe** genoem. Dit moet beskerm word en nie vir ander doeleindes gebruik word nie.
- Daar is koste verbonde aan die ekologiese **bestuur** van die opvanggebied, en daarvoor moet deur al die gebruikers van die hulpbron betaal word [artikel 56(2)(a)(iv)].
- Om watergehalte te bewaar, moet punt- en verspreide bronne van **besoedeling** ontmoedig word deur die identifisering van beheermetodes wat doeltreffer is as dié wat tans in gebruik is. Dit vereis die aanvaarding van instrumente soos 'n "besoedelaar betaal"-benadering ten opsigte van die generering van besoedeling. Die onderliggende filosofie van die "besoedelaar betaal"-benadering is om die besoedelaar so ver te kry om die omgewingskoste van besoedeling te internaliseer.

Soos aangedui in 5.2 en 7.1, maak die "besoedelaar betaal"-benadering nie deel uit van hierdie prysbepalingstrategie nie en sal dit in 'n later stadium ingevoer word saam met die prysing van afvalstorting.

4.3 Finansiële volhoubaarheid

Die metodes wat in die verlede deur DWB gebruik is om belangrike massa-rouwaterskemas (d.w.s. eerstevlak-skemas) te finansier, is om 'n hele aantal redes nie finansiël volhoubaar nie. Eerstens, aangesien daar nie met inflasie rekening gehou is nie, het dit gelei tot 'n geleidelike afname in die waarde van tariewe in reële terme. Tweedens is daar geen

voorsiening vir opknappingswerk gemaak nie. En derdens is daar geen voorsiening vir batevervanging gemaak nie.

'n Nuwe finansiële raamwerk word benodig vir die akkommodering van die watersektor se toenemende behoefte om finansiële outonoom te wees, om vir sy ontwikkeling groter bydraes uit die privaat-sektor te trek, en om finansiële verantwoordingspligtig en volhoubaar te wees.

In die nuwe benadering tot waterprysbepaling word daar voorgestel dat die **volle** finansiële koste van die voorsiening van water, insluitende die kapitaalkoste, van die watergebruikers verhaal moet word. Die nuwe benadering sal egter ingefaseer word met inagneming van die beperkings binne verskeie gebruikersektore om vinnig by prysstygings aan te pas.

4.4 Ekonomiese doeltreffendheid

Artikel 56(2)(c) van die Nasionale Waterwet, 1998, maak voorsiening vir die instel van 'n watergebruikvordering vir die bewerkstelling van billike en doeltreffende toewysing van water. Ekonomiesgewys word gelet op die optimum toewysing van skaars hulpbronne tussen mededingende gebruike. Dit is in gelyke mate van toepassing op die kapitaalhulpbronne gebruik in die ontwikkeling van waterinfrastruktuur (d.w.s. damme, reservoirs, pyplyne, ens.), en op natuurlike hulpbronne soos water. Om die doel van optimale hulpbrontoewysing te bereik, word daar in teorie vereis dat goedere geprys word teen hulle **geleentheidskoste**, wat bloot die waarde is van goedere waarvan afstand gedoen is (insluitende omgewingsgoedere en -dienste) wanneer 'n skaars hulpbron vir een doel gebruik word in plaas van vir sy beste alternatiewe gebruik.

Indien Suid-Afrika se waterhulpbronne volop was, sou dit nie nodig wees om 'n prys aan die waterhulpbron self te heg nie. Die behoefte aan waterbewaring en aanvraagbestuur in omstandighede van toenemende skaarste is 'n belangrike en groeiende fokus vir waterbeleid.

Die versekering van doeltreffende toewysing van die land se skaars waterhulpbronne vereis dat die prys van die hulpbron vasgestel word om sy skaarsheidswaarde te weergee. Versuim om water teen sy skaarsheidswaarde te prys, kan tot twee tipes wantoewysings van water lei:

- Onvoldoende aansporing om water te bewaar. Die gevolglike oorgebruik noodsaak voortydige uitbreiding van infrastruktuur en dit lei tot die vaslegging van die land se beperkte kapitaalhulpbronne wat beter vir ander doeleindes aangewend kon word.
- Sekere water wat vir laewaarde-doeleindes gebruik word. Dit lê 'n **geleentheidskoste** op deurdat dieselfde water nie vir alternatiewe, hoëwaardedoeleindes gebruik kan word nie. Sonder 'n ekonomiese vordering is daar geen basis vir mededinging om watervoorrade tussen lae- en hoëwaardegebruike nie, en dus geen aansporing om beskikbare voorrade van eersgenoemde na laasgenoemde te skuif nie.

In die konteks van waterskaarste, kan 'n argument uitgemaak word vir die instelling van **ekonomiese aansporings** in opvanggebiede wat watertekorte ervaar, om die bewaring van

water en die skuif van lae-waarde na hoë-waardegebruik aan te moedig. Dit kan administratief gedoen word, of deur markverwante meganismes te gebruik.

5 IMPLEMENTERING VAN DIE NUWE PRYSBEPALINGSTRATEGIE

5.1 Water onderworpe aan prysbepaling

Die prysbepalingstrategie vloei voort uit die vier oogmerke wat reeds bespreek is. Dit is gerig op die bewerkstelling van doeltreffende en koste-effektiewe toewysing van water, billikheid en regverdigheid in die toewysingsmeganisme, en langtermynvolhoubaarheid van die natuurlike omgewing.

Die beginpunt vir die prysbepalingstrategie is die waterbestuursgebied soos omskryf in artikel 1 van die Wet, en soos omskryf in Goewermenskennisgewing No. 1160, gepubliseer in die *Staatskoerant* van 1 Oktober 1999. Dit begin met 'n raming van die benutbare water beskikbaar in die gebied, wat vervat sal wees in die nasionale waterhulpbronstrategie (artikel 6 van die Wet). Dit sal afgelei word uit geohidrologiese evaluerings en hidrologiese modelle van die reënval/afloop/opgaring-verhoudings vir die betrokke opvanggebiede binne die waterbestuursgebied. Van hierdie hoeveelheid sal vyf eise vir water afgetrek word.

Die vyf eise is soos volg:

- **Gebruik toewysbaar ingevolge Bylae 1 van die Wet.** Dit verteenwoordig redelike gebruik, vir huishoudings en tuinbou, om vee en diere te laat suip, vir nood- en afvalstortingsdoeleindes vir individue wat toegang het tot oppervlak- en ondergrondse hulpbronne en rioleringstelsels, soos in landelike en binne plaaslike regeringsgebiede.
- **Basiese menslike behoeftes.** Dit verteenwoordig die eerste komponent van die Reserwe soos omskryf in artikel 1 van die Wet, en maak voorsiening vir die noodsaaklike huidige en toekomstige (10-jaar-horison-) behoeftes van individue wat deur die betrokke waterhulpbron bedien word en sluit in water vir drinkdoeleindes en voedselvoorbereiding en vir persoonlike higiëne. Die vrye gebruik afgebaken ingevolge Bylae 1 van die Wet, bevat reeds 'n basiese menslike behoefte-komponent vir sekere individue wat direkte toegang tot die waterhulpbronne het. Aangesien water vir basiese menslike behoeftes 'n klein gedeelte van wateraanvraag uitmaak, en opgaardamme gebou word hoofsaaklik om water vir ekonomiese gebruik te voorsien, is dit toepaslik dat die DWB die eerste gedeelte van eerstevlakwater (gelykstaande met daardie gedeelte wat vereis word om aan basiese menslike behoeftes te voldoen, omskryf as 25 liter per capita per dag) ook gratis aan waterdienste-owerhede beskikbaar stel. Dit is van toepassing op water onttrek deur plaaslike regering deur middel van eie aanlegte asook soos aan hulle voorsien uit openbare orgaardamme. Die oogmerk van gratis voorsiening van 'n gedeelte van die eerstevlakwater is om die toepassing van oorlewingstariewe op die derde vlak te bevorder, en sodoende te verseker dat alle Suid-Afrikaners regverdige toegang tot basiese dienste bekom (artikel 56(6)(c) van die Wet).

Die koste van rouwater wat in die basiese mensebehoefte voorsien en uit die voorsieningsbron in die gebiede van waterdienste-owerhede afkomstig is, moet dus gedra word deur al die ekonomiese gebruikers binne die waterbestuursgebied en dié wat uit 'n opgaardam of -stelsel voorsien word. Dit is belangrik om daarop te let dat die subsidiëring van die hulpbronnokoste van eerstevlakwater (soos dit na die derde vlak deurvloei) nie geag moet word as 'n subsidiëring van die verspreidingskoste van die derdevlakverskaffer van drinkbare watervoorrade nie. Derdevlakkoste moet ten volle deur die betrokke waterdiensteverskaffer gedra word.

Dus, selfs indien die verantwoordelike owerheid die eerste deel van eerstevlakwater gratis aan die derdevlakwaterverskaffer beskikbaar stel, impliseer dit nie dat sodanige water gratis vir die verbruiker sal wees nie. Daar word egter beoog dat die DWB, deur middel van die voorgestelde regulasies ingevolge die Wet op Waterdienste, van plaaslike regering sal vereis om die vordering op basiese watervoorsiening op die laagste moontlike bedrag vas te stel.

Die voorgeskrewe prosedure vir die wyse waarop waterdienste-owerhede toegang tot gratis rouwatervoorrade kan kry, is in 7.2 van hierdie strategie vervat.

- **Langtermyn- ekologiese volhoubaarheid.** Dit verteenwoordig die tweede komponent van die Reserwe, en verwys na die water (hoeveelheid en gehalte) wat benodig word om die water-ekostelsels van die waterhulpbron te beskerm. Die DBW sal bepaal wat daardie behoeftes is deur toepaslike modelle te gebruik. In sommige opvanggebiede kan dit nodig wees om bestaande wettige gebruike van water tot onder hulle huidige vlakke te verlaag ten einde die vereiste ekologiese reserwe te voorsien. Dit kan selfs nodig wees om 'n nuwe opgaardam te bou om in 'n oor-toegewysde waterhulpbron vir die ekologiese reserwe voorsiening te maak. Die verhaling van koste van so 'n dam sal nie outomaties deel van hierdie rouwaterprysbepalingstrategie uitmaak nie en subsidies kan op 'n sosio-ekonomiese grondslag oorweeg word. Dit is belangrik om daarop te let dat hierdie eise nie omgewingsdoeleindes verder as die ekologiese reserwe insluit nie. Byvoorbeeld, omgewings"behoefte" wat bloot die vaste-eiendoms waarde van 'n eiendom (bv. 'n privaat dam) verhoog, sal nie vir langtermyn- ekologiese volhoubaarheid as nodig geag word nie en sal dus nie van die prysbepalingstrategie vrygestel word nie.
- **Internasionale verpligtinge.** Die watervereistes om Suid-Afrika se verpligtinge ten opsigte van internasionale waters na te kom, moet soortgelyke prioriteit ontvang, behalwe waar spesifieke ooreenkomste aangegaan is betreffende die prysbepaling en voorsiening van water aan buurlande.
- **Inter-opvanggebiedoorplasings.** Die nasionale waterhulpbronstrategie (artikel 6 van die Wet) sal water identifiseer en kwantifiseer wat uit een waterbestuursgebied geneem word om die watervoorraad in 'n ander gebied aan te vul.

Die water wat beskikbaar is sodra aan hierdie eise voldoen is, kan tussen mededingende watergebruikers in waterbestuursgebiede toegewys word. Dit kan ook water insluit wat deur middel van 'n inter-opvanggebiedoorplasingskema uit 'n ander waterbestuursgebied ingevoer

is. Hierdie water sal as ekonomiese gebruik van water geklassifiseer word en is aan prysbepaling onderworpe.

5.2 Woordomsrywings van watergebruik

Artikel 56 van die Nasionale Waterwet gelas die Minister om 'n Prysbeplanningstrategie vir vorderings in te stel vir enige watergebruik beskryf in artikel 21:

- a) die neem van water vanuit 'n waterhulpbron;
- b) die opgaar van water;
- c) die belemmering of die wegkeer van die vloei van water in 'n waterloop;
- d) die deelname aan 'n stroomvloeiverminderingsaktiwiteit (d.w.s. landgebaseerde aktiwiteite wat stroomvloei aanmerklik verminder);
- e) die deelname aan 'n beheerde aktiwiteit (d.w.s. aktiwiteite wat 'n nadelige inpak op waterhulpbronne het);
- f) die storting van afval of waterbevattende afval in 'n waterhulpbron;
- g) die beskikking oor afval op 'n wyse wat nadelig op 'n waterhulpbron kan inwerk;
- h) die wegdoening van water wat afval bevat van 'n industriële of elektrisiteitsopwekkingsproses;
- i) die verandering van die bedding, walle, loop of kenmerke van 'n waterloop;
- j) die verwydering, storting of wegdoening van water wat ondergronds gevind is;
- k) die gebruik van water vir ontspanningsdoeleindes.

Dit is belangrik om daarop te let dat die langtermynnoogmerk van die DWB is om stelselmatig elk van die 11 watergebruike hierbo omskryf, te oorweeg en te besluit of en hoe elkeen geprys en gehef moet word. Daar word egter erken dat dit nie prakties uitvoerbaar is om 'n prysbeplanningstrategie vir alle watergebruike binne 'n kort tydperk te ontwikkel nie. Byvoorbeeld, terwyl die bestuur van verspreide bronne van waterbesoedeling en die ontwikkeling van 'n omvattende afvalwegdoening-vorderingstelsel waarskynlik belangrike komponente van 'n toekomstige prysbeplanningstrategie sal wees, kan hulle realisties gesproke nie ten volle in hierdie eerste ronde prysbeplanningstrategie-inisiatiewe geïmplementeer word nie. Die prysbeplanningstrategie moet dus gesien word as 'n proses wat mettertyd ontvou: Dit begin deur die prioritisering van daardie watergebruike wat waarskynlik die belangrikste en blywendste impak op Suid-Afrika se skaars waterhulpbronne sal hê.

Die bedoeling is om die instelling van vorderings in te sluit slegs vir daardie watergebruike wat verbruikend is en uitgedruk kan word in volumetriese terme betreffende jaarlikse hoeveelhede wat onttrek of opgegaar is of stroomvloei verminder in die aanvanklike prysbeplanningstrategie. Dit hou op die volgende wyses verband met die gebruike gespesifiseer in artikel 21 :

- Gebruik (a) vir onttrekking uit oppervlak- en ondergrondse waterhulpbronne.
- Gebruik (b) vir die volume water opgegaar, onderworpe aan die volgende oorwegings:

- ♦ Waar water vir gebruik uit die opgaardam onttrek word, sal die volume wat jaarliks onttrek word, die gebruik uitmaak;
- ♦ Waar opgaardamme slegs vir ontspanningsdoeleindes gebou word of om die vaste-eiendoms waarde van 'n eiendom te verhoog, en die dam water kry uit 'n waterloop met 'n versekerde lae vloei, of gevoed word deur 'n skema in besit van die DWB of 'n waterbestuursinstelling, sal die aanvanklike vulling in die geval van 'n nuwe dam en die jaarlikse hervulling in die geval van 'n bestaande dam die jaarlikse hoeveelheid gebruik bepaal. Die gebruik weens jaarlikse hervulling sal gebaseer word op die geraamde netto jaarlikse verdampingsverliese uit die volvoorraad-oppeervlakgebied van die dam onder gemiddelde klimaats- en reënvaltoestande.
- Gebruik d) met verwysing na die gekwantifiseerde gemiddelde jaarlikse gebruik van bosbouplantasies vir kommersiële doeleindes (artikel 36 van die Wet).
- Gebruike f), g) en h) sal nie ingevolge die aanvanklike prysbepalingstrategie gedek word nie. 'n Prysbeplanningstrategie word vir afval- en afvalwaterstorting ontwikkel en sal die onderwerp wees vir 'n afsonderlike toekomstige publikasie- en konsultasieproses ingevolge artikel 56 van die Nasionale Waterwet. Die aanvanklike prysbeplanningstrategie sal egter voorsiening maak vir die implementering van 'n vordering om die administratiewe koste van watergehaltebestuur te verhaal.
- Die ander watergebruike gemeld in artikel 21, sal nie onder hierdie algemene prysbeplanningstrategie gedek word nie, maar sodanige gebruike is onderworpe aan magtiging, wat voorwaardes kan insluit vir betaling vir die gebruik van water ingevolge hierdie strategie, of ander voorwaardes waaraan voldoen moet word.

5.3 Prysbeplanningstrategie vir watergebruik

Ingevolge die Wet kan die Minister, met die instemming van die Minister van Finansies, van tyd tot tyd by kennisgewing in die *Staatskoerant* 'n prysbeplanningstrategie vir vorderings vir enige watergebruik (artikel 56(1)) instel. Hierdie prysbeplanningstrategie bevat 'n strategie vir die stel van watergebruikvorderings -

- Vir die befondsing van waterhulpbronbestuur (artikel 56(2)(a));
- Vir die befondsing van waterhulpbronontwikkeling en gebruik van waterwerke (artikel 56(2)(b)); en
- Vir die bewerkstelling van die billike en doeltreffende toewysing van water (artikel 56(2)(c)).

Elkeen hiervan word hierna in meer besonderhede bespreek. Die prysbeplanningstrategie kan toegepas word slegs op waterbestuursgebiede of -skemas waar jaarlikse watergebruik geregistreer of gelisensieer is. Met die proses van registrasie sal 'n evaluering van die gemiddelde jaarlikse volumetriese gebruik van alle watergebruikers gedoen word. Die databasis van geregistreeerde of gelisensieerde jaarlikse volumetriese gebruik, asook die geraamde jaarlikse groei in aanvraag van gemagtigde watergebruikers voorsien uit Staatswaterwerke, sal die grondslag uitmaak waarop eenheid-sektorale vorderings vir elke

waterbestuursgebied, -skema of -stelsel bereken word. Die eindgebruikersektore waarvoor eenheid-sektorale vorderings vir eestevlakwater bereken sal word en jaarliks op 'n waterbestuursgebiedgrondslag aangekondig sal word, is die volgende:

- waterdienste-owerhede
- nywerheid, mynbou en energie
- besproeiing
- stroomvloeiverminderingsaktiwiteite

Die vordering vir opgaardamme waaruit geen onttrekking plaasvind nie (uitsluitende damme wat afvalwater opgaar), soos omskryf onder 5.2, sal behandel word onder die nywerheids-/mynbou-/energiesektor. Die bepaling van jaarlikse geraamde watergebruik deur middel van die registrasieproses vir die besproeiing- en stroomvloeiverminderingsektore word in deel 7 van hierdie dokument uiteengesit.

5.3.1 Befondsing van waterhulpbronbestuur

Hulpbronbestuursuitgawes hou verband met daardie aktiwiteite wat nodig is om die waterhulpbron of opvanggebied te reguleer, te bestuur en in stand te hou. Hierdie koste verskil van bokoste deurdat dit nie verband hou met water verkoop uit individuele skemes nie maar eerder met die bestuur van alle water binne 'n waterbestuursgebied soos omskryf in die nasionale waterhulpbronstrategie (Hoofstuk 2, Deel 1 van die Wet). Hierdie kan ingesluit word by die koste van die volgende werksaamhede wat verrig moet word deur die Departement en/of waterbestuursinstellings wat ingevolge die Nasionale Waterwet gedelegeerde of verleende bevoegdhede uitoefen:

- Beplanning en implementering van opvanggebiedbestuurstrategieë ingevolge Hoofstuk 2, Deel 2 van die Wet.
- Monitering en evaluering van waterhulpbronbeskikbaarheid, -gehalte en -gebruik.
- Waterhoeveelheidsbestuur, insluitende vloed- en droogtebestuur, waterverspreiding, beheer oor wateronttrekking, -berging en stroomvloeivermindering, en om die voordelige gebruik van water te bevorder.
- Die evaluering en prosessering van watergebruiklisensierings- en -registrasieaansoeke.
- Waterhulpbronbeskerming, watergehaltebestuur en waterbesoedelingsbeheer.
- Waterbewarings- en -aanvraagbestuur.

Aanvanklik sal waterhulpbronbestuur steeds die taak van die Departement van Waterwese en Bosbou bly. Die Nasionale Waterwet dui egter duidelik aan dat dit die bedoeling is om Opvanggebiedbestuursagentskappe (OBA's) op 'n geleidelike en progressiewe wyse te skep en om beduidende waterhulpbronbestuursfunksies aan hierdie liggame te deleger of toe te wys. Waar daar geen OBA's bestaan nie, sal die DWB as die OBA funksioneer. Die aktiwiteite van

die OBA's sal befonds word uit die waterhulpbronbestuursvorderings, wat gemaak kan word deur en betaalbaar is aan die betrokke OBA's.² In waterbestuursgebiede waar nie alle opvanggebiedbestuursfunksies aan OBA's toegewys is nie, sal die betrokke OBA's vorderings in, en fondse verskuldig aan die DWB sal na die Departement toe oorgaan. Indien die OBA bestaan, maar vermoë ontbreek, kan dit deur die DWB gedoen word en die betrokke gedeelte na die OBA toe oorgaan.

Om die bepaling van vorderings vir waterhulpbronbestuur te hanteer, is die begroting van die DWB geherstruktureer om 'n Geïntegreerde Opvanggebiedbestuur-Bedryfsrekening te bevat ter voorsiening van die toewysing van departementele koste en die invordering van inkomste met betrekking tot die volgende hoofaktiwiteite, onder welke opskrifte die funksies hierbo gemeld, gegroepeer kan word:

- Funksionele steun (van streekskantore), behelsende indirekte koste of bokoste.
- Beplanning en implementering van opvanggebiedbestuurstrategieë. Hierdie aktiwiteit sluit in die koste van die instelling van OBA's en die ontwikkeling van 'n opvanggebiedbestuurstrategie vir 'n spesifieke opvanggebied in 'n waterbestuursgebied.
- Damveiligheidsbeheer. Hierdie aktiwiteite word in die Nasionale Waterwet omskryf en word uitgevoer om die beveiliging van mense en hul materiële besittings te verseker teen faling van opgaardamme.
- Watergehaltebestuur. Hierdie aktiwiteit omvat die watergehaltebeskerming van water-ekostelsels en die bestuur van terugvloeiing en die ontvangwatergehalte van alle gebruikers om die volhoubare geskiktheid van gebruik daarvan te bewerkstellig.
- Waterbenutting. Hierdie aktiwiteit omvat waterhoeveelheidsbestuur, toewysings en hidrologiese en geohidrologiese evaluering en monitering.
- Waterbewaring (insluitende die Werk vir Water-program). Hierdie aktiwiteit sluit ook aanvraagbestuur in, wat bestaan uit maatreëls ter vermindering van die gebruiksaanvraag na water, en die evaluering en monitering van sektorale aanvraag. Die Werk vir Water-program omvat die uitroei van waterverbruikende indringerplantegroei in wateropvanggebiede, met die oog op die verbetering van die beskikbaarheid van instroom-water vir tersaaklike watergebruikers en die Reserwe, en sodoende die uitstel van die skep van bykomende opgaring om in-toenemende wateraanvraag te voorsien.

Die jaarlikse begrotings vir die gelyste aktiwiteite kan insluit die koste van die DWB se streeks- en/of OBA-bedryfspersoneel en administratiewe uitgawes, raadplegende dienste en werk verrig deur kontrakteurs.

Implementering van 'n vordering om waterhulpbronbestuur te befonds

Die bepaling van waterhulpbronbestuursvorderings, aanvanklik deur DWB en later deur OBA's, sal op die volgende wyse gedoen word:

² OBA's kan ook befondsing ontvang uit fondse bestem deur die Parlement, en uit ander bronne.

- Kennis sal geneem word van waterbestuursgebiede wat ingevolge die nasionale waterhulpbronstrategie ingestel is en waarbinne die DWB en/of OBA's geïntegreerde waterhulpbronbestuur sal toepas.
- Waterhulpbronbestuursaktiwiteite sal bepaal word wat in elke waterbestuursgebied ooreenkomstig die geherstruktureerde begroting uitgevoer sal word.
- Koste sal gedurende die begrotingsproses aan waterhulpbronbestuuraktiwiteite in elke waterbestuursgebied toegewys word.
- Alle gebruikersektore soos omskryf in 5.3, waarop aktiwiteite van toepassing is, sal per waterbestuursgebied geïdentifiseer word.
- Die totale geraamde gemiddelde jaarlikse watergebruik van elke gebruikersektor, asook die hoeveelheid water wat via 'n inter-opvanggebiedoorplasingskema aan 'n ander waterbestuursgebied voorsien moet word, sal per waterbestuursgebied bepaal word. Dit sal oor 'n tydperk gedoen word totdat 'n watergebruiktoewysingsplan opgestel is ingevolge artikel 9(e) van die Wet, op grond van die individuele geregistreerde en gelisensieerde watergebruike en die benutbare water beskikbaar vir 'n nog onderbenutte waterbestuursgebied. Dit kan 'n aanvanklike oorskatting van werklike sektorale gebruik beteken wat uitgefaseer sal word. 'n Evaluering sal ook gemaak word van die basiese menslike behoeftesvereiste vir die waterdienste-owerheidsektor, wat nie aan eerstevlak-prijsbepalings onderworpe sal wees nie (sien 7.2).
- Die inter-opvanggebiedoorplasing van water uit een waterbestuursgebied na 'n ander sal lei tot 'n vermindering in die hoeveelheid water beskikbaar vir gebruik in die skenkergebied. Gevolglik sal die potensiaal vir generering van fondse uit watergebruiksvorderings vir waterhulpbronbestuursaktiwiteite in die skenkergebied verklein. Omgekeerd sal die ontvangsgebied in staat wees om bykomende waterhulpbronbestuursvorderings op die gebruik van die oorgeplaasde water te hef. In hierdie omstandighede sal sommige van die vorderings gehef in die ontvangwaterbestuursgebied na die skenkergebied oorgeplaas word vir waterhulpbronbestuursdoeleindes. Die hoeveelheid wat oorgeplaas moet word, sal gebaseer word op die produk van die begroting vir waterhulpbronbestuur in die skenkerwaterbestuursgebied en die verhouding van die oorgeplaasde waterhoeveelheid tot die totale benutbare water beskikbaar in die skenkergebied. DWB sal die oorplasing van koste tussen die betrokke OBA's fasiliteer.
- Die koste van waterhulpbronbestuursaktiwiteite en enige insetkoste betreffende die inter-opvanggebiedoorplasing van water sal aan gebruikersektore toegewys word. Kostetoewysing sal tussen aktiwiteite differensieer deurdat die koste van sekere aktiwiteite deur nie alle nie, maar slegs sekere gebruikersektore gedra sal word, met inagneming van die relatiewe voordele wat aan die verskillende sektore toeval deur die uitvoer van die aktiwiteite.

Die toedeling van aktiwiteitskoste sal pro rata gedoen word volgens die gemiddelde geregistreerde, gelisensieerde of geraamde jaarlikse watergebruik van sektore wat uit die aktiwiteit voordeel trek. In die bepaling van gemiddelde jaarlikse volumetriese gebruik, sal die versekering van lewering aan verbruikers voorsien uit skemas van bestuursinstellings in ag geneem word (sien 5.3.2.1 vir die behandeling van bestaande staatswaterskemas). Die koste van waterhulpbronbestuursaktiwiteitskoste wat deur individuele gebruikersektore gedra moet word, sal soos volg bepaal word:

- ♦ Waterdienste-owerhedesektor — Hierdie sektor sal alle aktiwiteitskoste in 'n waterbestuursgebied lok, maar dan slegs met betrekking tot hul "ekonomiese" gebruik van water (d.w.s. basiese menslike behoeftes uitgesluit) in verhouding tot totale geraamde jaarlikse "ekonomiese" gebruik (sien 7.2).
- ♦ Nywerheid-, mynbou- en engiesektor — Hierdie sektor sal alle koste van waterbestuursaktiwiteite pro rata tot sy deel van totale "ekonomiese" gebruik in die waterbestuursgebied lok.
- ♦ Besproeiingsektor — Hierdie sektor sal alle koste van waterhulpbronbestuursaktiwiteite pro rata lok tot "ekonomiese" gebruik, behalwe dié wat verband hou met die subsidiëring van die Werk vir Water-program (sien 7.4).
- ♦ Stroomvloeiverminderingsaktiwiteite — Tans is bebossing die enigste verklaarde stroomvloeiverminderingsaktiwiteit, maar in die nabye toekoms kan ander droëlandboerderyaktiwiteite by hierdie lys gevoeg word. Bebossing sal alle koste van waterhulpbronbestuur lok pro rata tot "ekonomiese" gebruik, behalwe vir damveiligheidsbeheer en die Werk vir Water-program.
- 'n Gedifferensieerde subsidiebeleid sal toegepas word om jaarlikse koste te bepaal wat van die verskillende gebruikersektore verhaal moet word. In hierdie opsig sal staande ooreenkomste betreffende die subsidiëring van bestaande aktiwiteitskoste deel van die prysbepalingstrategie uitmaak. Die Wet maak ook in artikel 56 (3) (e) voorsiening om van sommige van die vorderings afstand te doen ten opsigte van bepaalde gebruikers. Dit word in meer detail in deel 7 hieronder beskryf.
- Vorderings vir sektorale waterhulpbronbestuur sal vir elke waterbestuursgebied bepaal word deur die verhaalbare sektorkoste, per aktiwiteit, te deel deur die geregistreerde of totale geraamde benutbare jaarlikse volume vir die sektor verbruik (laasgenoemde in die geval van onderbenutte waterbestuursgebiede).
- Watervkoperekeninge van geregistreerde watergebruikers sal bepaal word deur die eenheids-vordering van die tersaaklike sektor te maal met die geregistreerde jaarlikse volume water. Hierdie vorderings sal derhalwe vaste betalings tot gevolg hê, wat sesmaandeliks gefaktureer sal word vir die besproeiing- en stroomvermindering-sektor en maandeliks vir die ander sektore. Die DWB en / of OBA's kan, gebaseer op kosteoorwegings, minimum afsnypunte vir geregistreerde watergebruik per persoon bepaal, waaronder gebruikers nie gefaktureer sal word nie.
- In onderbenutte waterbestuursgebiede sal die tekort in begrote waterhulpbronbestuurkoste wat verhaal moet word deur middel van vorderings wat op totale geraamde watergebruik gebaseer is, uit die Skatkis gesubsidieer word deur middel van die DWB-bedryfsrekening.

5.3.2 Befondsing van waterhulpbronontwikkeling en gebruik van waterwerke

Waterhulpbronontwikkeling en gebruik van waterwerke hou verband met daardie aktiwiteite wat nodig is vir die befondsing van die beplanning, ontwerp, ontwikkeling, bedryf, instandhouding en verbetering van Staatswaterskemas en skemas wat deur waterbestuursinstellings befonds moet word.

5.3.2.1 Staatswaterskemas

Waterhulpbronontwikkelingskoste (d.w.s. kapitaalkoste)

Ingevolge artikel 56(2)(b) van die Nasionale Waterwet, 1998, kan waterhulpbronontwikkelingskoste insluit die verwante koste van ondersoek, beplanning, ontwerp en konstruksie van waterskemas, wat die kapitaalkoste van projekte uitmaak. Die belangrikste afwyking van die finansieringsmetode wat in die verlede deur die DWB gebruik is, is te vinde in die hantering van kapitaalkoste, wat anders as alle ander koste is. Dit is omdat langtermynkapitaalbeleggings, soos waterskemas, dikwels 'n leeftyd het wat verder as die boekjaar strek. Drie algemene finansiële benaderings kan gebruik word vir die bepaling van die kapitaalgedeelte van die eenheidskoste van water: dit is die "*befondsing*", "*depresiasie*"- en "*opbrengskoers*"-benaderings.

- **Befondsingsbenadering.** Die basiese kenmerk van die befondsingsbenadering is dat inkomstes voldoende moet wees om skulddiensverpligtinge (rentekoste) en die delging van lenings te dek. Die befondsingsbenadering is histories deur DWB gebruik en word oor die algemeen beter in die openbare sektor verstaan vanweë die kontantgeïënteerde begroting- en rekeningkundestelsel wat tradisioneel deur hierdie sektor gebruik is. Hierdie metode is op sogenaamde "veronderstelde lenings" gebaseer, waar daar aanvaar is dat die Staat lenings verkry het om skemas te befonds en dat hierdie "lenings" dan deur watergebruikvorderings terugbetaal moes word.
- In die **depresiasiebenadering** word batewaardes (saamgestel uit waterinfrastruktuur-bates en ander vaste bates) oor hul bruikbare ekonomiese lewens gedepresieer. Depresiasie word normaalweg bereken op 'n reguit-lyn-basis oor die lewe van die bate. In 'n inflasionêre omgewing is dit raadsaam om bates op grond van huidige vervangingskoste te depresieer. Die verhalings van depresiasiekoste word gebruik om volhoubare watervoorrade uit bestaande bates te verseker.
- Die **opbrengskoersbenadering** hou rekening met die verdien van 'n spesifieke opbrengskoers op óf die totale kapitaal aangewend (vastebatesgrondslag of totale bates) óf die totale finansiële belegging wat gebruik word vir die finansiering van fasiliteite om water te voorsien. Die opbrengskoers behoort op die sosiale geleentheidskoste van kapitaal vir die regering gebaseer te word en moet op 'n vlak wees wat voldoende is om die jaarlikse kostevereiste vir die voorsiening van nuwe bates te befonds. Hierdie benadering word gewoonlik tesame met depresiasierekeningkunde toegepas.

By die evaluering van hierdie drie benaderings is dit belangrik om daarop te let dat die DWB se huidige rekeningkundige beleid ooreenstem met die "*befondsings*"-benadering, naamlik op 'n kontantbasis met streng kostebeheer teen begroting. Fondsrekeningkunde is nie in ooreenstemming met Algemeen Aanvaarde Rekeningkundige Praktyk (AARP) nie, en word nie voorgestaan deur organisasies wat van eksterne beleggers en leners afhanklik is nie. Die Wet op Bestuur van Openbare Finansies, 1999, vereis dat Staatsfinansiering by AARP moet aanpas. Bowendien is die befondsingsbenadering problematies in waterskaars lande deurdat eenheidskoste sal afneem wanneer lenings terugbetaal is.

Die eerstevlak-prysbepalingsstrategie vir Staatswaterskemas in hierdie dokument uiteengesit, word gebaseer op die "*opbrengskoers*"-benadering, wat tesame met depresiasie toegepas word. Die redes hiervoor is die volgende:

- Eerstens is depresiasie 'n werklike deel van die koste van waterinfrastruktuur, deurdat dit die verlies in waarde verteenwoordig van bestaande fasiliteite wat nie deur huidige instandhouding herstel word nie, wat plaasvind vanweë slytasie, agteruitgang, ontoereikendheid en veroudering. Die depresieerbare gedeelte van die ontwikkelingskoste van bates maak die vervangingskoste uit wat nodig is wanner die skema die einde van sy bruikbare leeftyd bereik.
- Tweedens is die **opbrengs op bates** bedoel om 'n regverdige opbrengskoers te voorsien op die totale kapitaal aangewend deur die Staat om die ontwikkeling van waterinfrastruktuur te finansier. Dit sal finansiële volhoubaarheid verseker van skemas wat deur DWB gebou is uit fondse voorsien deur die Skatkis en, net so belangrik, dat die werklike koste van water deur gebruikers betaal word.

Dus, ten einde die koste van waterhulpbronontwikkeling te verhaal, sal die kapitaalkomponent van die eenheidskoste van water voorsien uit Staatswaterwerke bepaal word deur 'n depresiasievordering en 'n bate-opbrengsvordering.

Depresiasie

Depresiasie word omskryf as die stelselmatige toewysing van die depresieerbare bedrag van 'n bate oor sy bruikbare leeftyd en sal soos volg toegepas word:

- Depresiasie sal op 'n reguit-lyn-basis toegepas word, wat beteken dat die depresieerbare bedrag toegewys sal word in gelyke bedrae oor die bruikbare leeftyd van die bates.
- Die depresieerbare bedrag sal die jaarlikse depresieerbare gedeelte van die gedepresieerde vervangingswaarde wees, wat bepaal sal word ooreenkomstig 'n herwaardasiebeleid waardeur waterhulpbronbates periodiek herwaardeer sal word. Aanvanklik sal berekeninge gebaseer word op die syfers van die ondersoek na die voorraad van bates en op finansiële inligting betreffende Staatswaterskemas wat in 1998 geïnisieer is.
- Volledige tegniese herwaardasies sal uitgevoer word met tussenposes van hoogstens 10 jaar. Die oorblywende bruikbare leeftyd van bates en die depresieerbare gedeelte sal ook tydens die herwaardasies herevalueer word. Gedurende die jare tussenin sal lessenaar-herwaardasies jaarliks uitgevoer word en sal die gemiddelde Oktober-tot-September-producenteprijsindeks (PPI) op die batewaardes en sodoende op die jaarlikse depresiasiebedrag van toepassing wees.
- Die depresieerbare gedeelte en bruikbare leeftyd waarvoor die bate gedepresieer sal word, moet deur gekwalifiseerde ingenieurs bepaal word en moet, vir doeleindes van aanvanklike prysbepaling, in ooreenstemming wees met die tabel hieronder. Die tegniese herwaardasies sal ook deur gekwalifiseerde ingenieurs bepaal word.

Die depresieerbare gedeelte en bruikbare leeftyd wat in die tabel gelys is, hou verband met nuwe waterhulpbronbatekomponente en kan met elke herraming verander. Die jaarlikse depresiasiekoste van bestaande bates kan dus ook met elke herraming aanpas en sal op die herhaalde oorblywende bruikbare leeftyd gebaseer word.

Komponent	Depresieerbare Gedeelte (%)	Geraamde Totale Bruikbare Leef tyd
Damme en keerwalle	10	45
Reservoirs	100	45
Kanale	40	45
Tonnels	10	45
Pompstasies	40	30
Hewels en betonpylyne	30	45
Staalpylyne	75	30
Waterbehandelingswerke	30	45
Geboue	100	40

Opbrengs op bates

Hierdie komponent van die vordering sal bepaal word deur 'n gemiddelde persentasie toe te pas op die huidige gedepresieerde vervangingswaarde van waterinfrastruktuurbates. Dit sal gedoen word met die oog op die generering van kapitaal ter befondsing van die jaarlikse koste van beplanning, ontwerp en konstruksie van nuwe en aanvullingskemas of aanvraagbestuurmaatreëls. Die persentasie-opbrengs sal in oorleg met die Departement van Finansies vasgestel word op basis van die reële langtermyn-koste van kapitaal vir die regering. 'n Syfer van 4% is voorgestel as 'n gepaste koers om te voldoen aan die geprojekteerde langtermyn groei in die aanvraag na rouwater voorsien uit staatswaterskemas. Hierdie benadering aanvaar dat die marginale eenheidskoste van nuwe bates gelyk sal wees aan die gemiddelde eenheidskoste van bestaande bates, geherevalueer teen huidige prysvlakke. Alhoewel daar geredeneer kan word dat die koste van nuwe skemas hoër kan wees as die vervangingskoste van bestaande skemas weens die feit dat die goedkoper damterreine uitgeput is, is dit ook 'n feit dat aanvraagbestuur aanvraag kan verminder en sodoende ook die jaarlikse kapitaalkostevereistes. Daar word aanvaar dat hierdie twee opponerende invloede sal uitbalanseer.

Hierdie opbrengs sal op 'n skemaverwante grondslag ingesamel word deur middel van 'n opbrengs-op-bates-vordering op waterverkope, maar sal slegs op dié sektore met toenemende aanvraag toegepas word. Hierdie sektore is geïdentifiseer as die plaaslike regering-, nywerheids-, mynbou- en engiesektore. Ondersoeke na die historiese groei in aanvraag van hierdie sektore het getoon dat die toepassing van 'n gemiddelde jaarlikse koers van vier persent op die gedepresieerde vervangingskoste van die betrokke Staatswaterinfrastruktuurbates, 'n gelykbreekopbrengs sal verseker.

Vasstelling van waterhulpbronontwikkelings-vordering

Die nuwe benadering vir die bepaling van die kapitaalkostekomponent van water voorsien uit Staatswaterskemas, bestaan uit twee komponente: die depresiasie- en opbrengs op batevorderings, wat bepaal sal word deur die toegewysde jaarlikse koste te deel deur die verwagte waterverkope.

Depresiasie van bates op 'n reguit-lyn-basis sal lei tot konstante reële-term jaarlikse koste tussen tydperke van herwaardasie van bates, waarop die PPI as inflator toegepas kan word. Die depresiasievordering sal dus nie aan skielike variasies onderworpe wees nie en sal tot gladde sektorale vorderings aanleiding gee.

Sover dit die opbrengs op bates-komponent van die vorderings aangaan, is dit belangrik om daarop te let dat die streng toepassing van 'n konstante koers op die gedepresieerde vervangingswaarde van waterinfrastruktuur met verloop van tyd aanleiding kan gee tot dalende finansiële opbrengste in reële terme (d.w.s. die gedepresieerde vervangingswaarde van 'n bate is in jaar 2 laer as in jaar 1). Die gevolglike jaarlikse opbrengs op batevorderings wat op hierdie wyse bepaal is, sal ook tot aansienlike verhogings in tariewe lei wanneer batekomponente van 'n skema die einde van hul bruikbare leeftyd bereik het en vervang moet word, en sodoende die batewaarde herstel en die opbrengs op bates bo dié van die vorige jaar verhoog.

Ten einde spronge in tarief-verhogings te vermy, sal dit nodig wees vir die instelling, op 'n skema-vir-skema-basis, van gelykgestelde opbrengs op batewaardes wat konstant is in reële terme. So 'n "gemiddelde" opbrengs sal oor 'n tydperk van 45 jaar bereken word vir alle batekomponente waaruit die skema of stelsel bestaan. Tussen die periodieke herwaardering van skemabates, sal die gelykgestelde jaarlikse opbrengs op batewaardes, plus die jaarlikse depresiasiekoste, deur die PPI geïnfleer word vir doeleindes van vasstelling van gladde waterhulpbronontwikkelings-vorderings.

Voor-finansiering (Artikel 56(2)(b)(iii) van die Wet)

Die opbrengs op batevordering maak voorsiening vir finansiering van die ontwikkelingskoste van nuwe skemas en kan dus gebruik word om die koste van ontwikkeling van aanvullingskemas voor die lewering van water te finansier. Die opbrengs op batevordering sal dus benut word om die jaarlikse koste van beplannings-lewensvatbaarheidstudies vir verpligte aanvullingskemas te finansier.

'n Unieke ontwikkelingsituasie kan voorkom in die geval waar 'n groot aanvullingskema beplan en uitgevoer word, maar waar die infrastruktuur om sekere redes nie Staatseiendom geword het nie en die konstruksie-uitgawe deur die ingestelde waternutsbedryf gefinansier moet word uit betalings van watergebruikers van die bestaande Staatswaterskema voordat water deur die aanvullingskema in die stelsel gelewer word. Dit is die situasie in die geval van die Lesotho Hoogland Waterprojek Fase 1A, wat gebou is om die Vaalrivierstelsel aan te vul en waar bestedings benodig vir die betaling van lenings verkry deur die TCTO om die skema te bou, van die Vaalrivierstelsel-watergebruikers verhaal is en nog verhaal word. Dit is gedoen om op die lang termyn 'n gladde prysbepalingsproses te verseker en skielike en aansienlike stygings in waterpryse te verhoed.

In die toekoms moet die opbrengs op bate-inkomste wat uit huidige Staatswaterskemas verkry word, slegs gebruik word om aanvullingskemas in Staatsbesit te befonds, maar betaling vir die uitgawes aangegaan vir skemas, soos die LHWP Fase 1, wat die eiendom van ander instellings is, sal steeds verhaal moet word deur bykomende kosteheffings aan watergebruikers in die betrokke stelsel.

Sekerheid van Voorsiening (Artikel 56(4)(b)(iii) van die Wet)

Met die bepaling van tariewe van veeldoelige waterwerke, sal dit nodig wees om die vlak van sekerheid te oorweeg waarteen water aan die verskillende gebruikers voorsien word ten einde kapitaalkoste tussen verskillende gebruikers toe te wys. Gebruikers wat byvoorbeeld 'n hoër sekerheid van voorsiening verlang, sal vir hul watertoewysing 'n premie moet betaal in verhouding tot daardie gebruikers wat 'n laer sekerheid van voorsiening verlang. Dit sal op die volgende wyse uitgevoer word:

- Waterhulpbronontwikkelingskoste van damme sal toegewys word in verhouding tot die langtermyn- geraamde gemiddelde jaarlikse gebruik van watertoewysings aan die verskillende gebruikers/sektore, en sal daardeur die kwessie van oplegging van differensiële waterbeperkings tydens droogtes in berekening bring.

Om hierdie strategie te bewerkstellig, moet gesofistikeerde hidrologiese risiko-ontledings vir alle Staatsdamme gedoen word en onderhandelings met gebruikers gevoer word oor die vlakke van versekering. In die tussentyd moet die langtermyn- gemiddelde jaarlikse gebruik van die verskillende gebruikersektore geag word die volgende persentasies van sektorale toewysings op Staatswaterskemas te wees:

- ♦ Besproeiingsektor – 91% (100% vir 70% van die tyd, en 70% vir 30% van die tyd);
 - ♦ Munisipale sektor – 97% (100% vir 70% van die tyd, en 90% vir 30% van die tyd);
 - ♦ Strategiese nywerheidsektor, bv. Eskom, Sasol – 100% (geen waterbeperkings sal normaalweg opgelê word nie).
- In die geval van waterverspreiding-strukture, sal die verdeling van kapitaalkoste gedoen word in verhouding tot die vereiste spitsvloeie van voorsiening aan die verskillende sektore.

Behandeling van Reserwes

Wanneer die nuwe prysbepalingstruktuur ingefaseer is, sal die depresiasie- en opbrengs-opbates-vorderings lei tot reserwefondse wat teoreties met verloop van tyd opgebou het. So lank as wat Staatswaterskemas egter deur die Staat besit word, sal hierdie reserwefonds na Tesourie toe teruggaan, hetsy indirek deur die vermindering van die jaarlikse aanvulling van die Departementele Bedryfsrekening uit Tesouriefondse, of direk as gevolg van jaarlikse surplusse op die Bedryfsrekening wat na die Tesourie vloei. Die DWB sal dus in 'n posisie wees om kapitaalkostevereistes vir depresiasie op spesifieke skemas uit sy algemene inkomstebasis op die Bedryfsrekening te finansier en om die ontwikkeling van aanvullingskemas uit Skatkisbegroting-toewysings te finansier. DWB sal 'n rekeningkundige stelsel instel om die omvang en gebruik van hierdie fondse aan te teken.

Gebruik van waterwerke-koste

Dit is die koste, sowel direk as indirek, wat aangegaan word vir die bedryf en instandhouding van Staatswaterskemas. Dit word ontleed in direkte en indirekte skemakoste.

- **Direkte skemakoste**

Dit is die vaste en veranderlike koste wat direk toeskryfbaar is aan die administrasie, bedryf en instandhouding van skemas. Direkte koste sluit in administrasiekoste, bedryfs- en instandhoudingskoste, pompkoste, direkte arbeids- en verspreidings- en bokoste.

- **Indirekte skemakoste**

Dit is die koste wat nie direk aan 'n spesifieke skema toegeskryf kan word nie, maar wat bydra tot die bestuur van die waterhulpbronne van die totale waterbestuursgebied, en bestaan uit die DWB se streekskantoor-koste, waarvan 'n gedeelte aan individuele skemas toegewys kan word op die grondslag van billike toewysing. Tydgebaseerde kosteberekening sal gebruik word om bokoste wat aan skemas toegewys is en dié wat met waterhulpbronbestuur verband hou, te skei.

Implementering van 'n vordering om waterhulpbronontwikkeling en gebruik van waterwerke op Staatswaterskemas te befonds

Die DWB het drie afsonderlike bedryfsrekeninge geskep vir:

- Massavoorsieningskemas (wat uiteindelik na waterbestuursinstellings oorgeplaas kan word)
- Geïntegreerde stelsels (nasionale water-infrastruktuur)
- Waterdiensteschemas (wat uiteindelik aan plaaslike regering oorhandig sal word). Die prysbepalingsstrategie vir befondsing van waterhulpbronontwikkeling en gebruik van waterwerke wat hier uiteengesit word, is nie op hierdie skemas van toepassing nie.

Waterhulpbronontwikkeling en gebruik van waterwerkevorderings sal soos volg geïmplementeer word:

- Alle Staatswaterskemas of geïntegreerde stelsels en hul voorsieningsgebiede sal geïdentifiseer en in die betrokke bedryfsrekening opgeneem word.
- Koste-inligting oor die waterinfrastrukturbates sal bepaal word. Dit sluit in die evaluering van huidige en gedepreseeerde vervangingswaardes vir elke komponent van die skemas, asook die verwagte bruikbare leeftyd daarvan. Kapitaalkoste van nuwe staatsbefondsde skemas sal die koste van projekbeplanning, ontwerp en konstruksie insluit. Direkte en indirekte koste betreffende gebruik van waterwerke sal bepaal word as deel van die jaarlikse begrotingsproses.
- Die watertoewysings aan verskeie gebruikersektore en die langtermyn- geraamde gemiddelde jaarlikse gebruik gebaseer op sekerheid van voorsiening sal vir doeleindes van kostetoewysing bepaal word.
- Die verwagte jaarlikse waterverkopevolume per gebruikersektor per skema sal ook as deel van die jaarlikse begrotingsproses vir die volgende boekjaar bepaal word.
- 'n Evaluering sal gemaak word van die hoeveelheid rouwater wat gratis voorsien sal word ingevolge die prosedure voorgeskryf in 7.2.

- Gebaseer op bogemelde inligting, sal jaarlikse koste bepaal en aan gebruikersektore toegewys word en sodoende sal die bepaling van eenheidskoste en dus vorderings per sektor per skema gedoen kan word. Die basisse vir bepaling en toewysing van die verskillende koste is soos volg:
 - ♦ Verdeling van kapitaalkoste tussen sektore — koste van damme sal verdeel word na verhouding van die langtermyn- geraamde gemiddelde jaarlikse sektorale gebruik (d.w.s. ekonomiese gebruik) van toewysings, en op dié manier word sekerheid van voorsiening in aanmerking geneem. Die koste van waterverspreiding-strukture sal verdeel word na verhouding van die spitslewering van voorsiening van maksimum sektorale toewysings.
 - ♦ Depresiasie — Kapitaalkostetoewysings (soos hierbo) aan verskillende sektore sal, soos hierbo beskryf, gedeprimeer word om die jaarlikse depresiasiekomponent per sektor te bepaal.
 - ♦ Opbrengste op bates — Die metode wat hierbo beskryf is om die reële terme-gemiddelde jaarlikse opbrengs op bates gebaseer op 4% van die gedeprimeerde kostetoewysings te bepaal, sal die tersaaklike kostekomponent per sektor aantoon. Die betrokke sektore is die waterdienste-owerheid, nywerheid-, mynbou- en engiesektore.
 - ♦ Koste van direkte gebruik van waterwerke — Sektor-spesifieke koste sal direk aan die betrokke sektore toegewys word. Die koste van gesamentlike werke sal verdeel word na verhouding van die geraamde jaarlikse sektorale watergebruik.
 - ♦ Koste van indirekte gebruik van waterwerke — Indirekte koste wat aan die skemas toegewys is, sal verder aan die verskillende sektore toegewys word deur gebruik te maak van 'n billike tydgebaseerde toewysingsbasis.
- Sodra alle koste bepaal en aan sektore toegewys is en verwagte verbruikswaardes per sektor bepaal is, kan eenheidskostevorderings per sektor vir elke skema of stelsel bepaal word. Daar sal gebly word by die beginsel van gelykmakende stelsel-vorderings in gevalle waar meer as een aanvullingskema per sektor betrokke is, soos dit tans in sekere gevalle toegepas word. Elke sektorale vordering sal uit twee komponente bestaan, naamlik die waterhulpbronontwikkelings-vordering en die gebruik van waterwerke (B&I)-vordering.
- Met die bepaling van die watergebruikvordering per sektor, sal 'n gedifferensieerde subsidie-beleid toegepas word. Dit beteken bloot dat die volle finansiële koste aanvanklik nie van alle sektore verhaal sal word nie. Daar sal gehou word by staande ooreenkomste met verteenwoordigende liggame en die nuwe vorderings sal progressief ingefaseer word vanaf huidige vlakke binne sektorale beperkings. Voorstelle in hierdie verband word in meer detail in deel 7 hieronder beskryf.
- Rekeninge aan watergebruikers op skemas sal gebaseer wees op die sektorale vordering en die besproeiingskwotas en vir die ander sektore op die gemete hoeveelheid water werklik gebruik of by ooreenkoms in die geval van geïntegreerde stelsels. Vir groot watergebruikers kan sodanige ooreenkomste die betaling van vaste maandelikse bedrae insluit asook wisselende bedrae gebaseer op water wat werklik gebruik is. Vir besproeiingskemas word trapsgewys stygende tariewe binne die kwotas in die vooruitsig gestel (sien 7.4). Dit sal aansporings verskaf om water te bespaar.

5.3.2.2 Skemas befonds deur waterbestuursinstellings

- Opvanggebiedbestuursagentskappe en watergebruikassosiasies moet, by die bepaling van hul inkomstebehoefte waarop watergebruikvorderings vir ontwikkeling en gebruik van waterwerke gebaseer is, die volgende in ag neem:
 - (a) verhaling van bokoste, bedryfs- en instandhoudingskoste;
 - (b) verhaling van kapitaalkoste en die betaling van lenings (waterbestuursinstellings is by Wet daarop geregtig om lenings te verkry om nuwe watervoorsieningsinfrastruktuur te finansier, en moet dus in staat wees om daardie lenings deur kosteverhaling te betaal);
 - (c) redelike voorsiening vir die depresiasie van bates, wat in 'n reserwefonds geplaas kan word vir benutting op die gepaste tyd;
 - (d) ander vorderings by wet en ingevolge hierdie prysbepalingstrategie op die instelling gehef; en
 - (e) die finansiële teikens ingesluit by sy besigheidsplan.
- Vorderings gehef deur waterbestuursinstellings kan op 'n proporsionele of differensiaalbasis gehef word, afhangende van die bepalinge van die assosiasie se konstitusie, of indien aldus deur die Minister gelas om uitvoering te gee aan die bepalinge betreffende die verlening van finansiële bystand ingevolge artikels 61 en 62 van die Wet.
- 'n Opvanggebiedbestuursagentskap moet, by oorweging van die vorderings vir rouwater voorsien uit 'n opgaardam in besit van en befonds deur die agentskap, voorsiening maak vir:
 - (a) subsidiëring van basiese menslike behoeftes in ooreenstemming met 7.2(1) van hierdie strategie; en
 - (b) verskille in sekerheid van voorsiening van gebruikersektore op 'n billike grondslag.

5.3.3 Bewerkstelling van billike en doeltreffende toewysing van water

Dit is belangrik om daarop te let dat die voorstelle betreffende die befondsing van waterhulpbronbestuur en waterhulpbronontwikkeling en die gebruik van waterwerke wat hierbo beskryf is, 'n aansienlik bydrae sal maak tot die bewerkstelling van billike en doeltreffende toewysing van water.

In die konteks van toenemende waterhulpbronskaarste, kan dit egter nodig wees om bykomende **ekonomiese aansporings** in te stel ten einde die toewysing van skaars waterhulpbronne tussen mededingende gebruike te optimaliseer. Sodanige ekonomiese aansporings kan in watergestremde gebiede ingestel word; die oogmerk is om watergebruik vanaf lae na hoë waardes te verskuif.

Hierdie vordering kan slegs deur DWB op 'n streeks- of nasionale vlak ingestel word en die inkomste sal aan Tesourie toeval. Indit nodig geag word om ekonomiese aansporings in watergestremde gebiede in te stel, kan dit administratief bewerkstellig word via 'n bepaalde vordering of via markgeöriënteerde meganismes.

- **Administratiewe meganismes.** 'n Administratief vasgestelde *ekonomiese* vordering kan ingestel word in gebiede waar water hoofsaaklik vir laewaardedoeleindes gebruik word. Sodanige vordering sal bykomend wees by die vordering vir waterhulpbronbestuur en -ontwikkeling hierbo gemeld. Die basis vir die vasstelling van 'n ekonomiese vordering sal wees die geleentheidskoste van water soos weergee in transaksies wat tussen watergebruikers plaasvind. Hierdie vordering sal nie die marginale koste van die volgende skema oorskry nie en moet, ideaalgesproke, gebaseer wees op die markopruimingvlak van elke gebied. Vanweë die feit dat die Staatswaterinfrastrukturbates in die toekoms teen hulle huidige of marginale koste geprys sal word, sal die ekonomiese vordering nie toegepas word nie op gebruikers van Staatswaterskemas op wie die bate-opbrengsvordering gehef is. Die bate-opbrengsvordering kan dus as 'n plaasvervanger gebruik word vir die ekonomiese vordering by Staatswaterskemas.
- **Openbare Veiling.** Hierdie metode kan gevolg word in gebiede onder waterspanning (Hoofstuk 4, Deel 8 van die Wet) en waarvoor verpligte lisensies uitgereik is. Die uitreik van nuwe permitte vir enige oorblywende water kan geskied deur 'n bie- of tenderproses vir sekere opvang- of subopvanggebiede. Die beskikbare permitte sal aan die hoogste botte of tenders toegeken word teen 'n prys gelyk aan die laagste bot bokant die afsnypunt, of, met ander woorde, teen die prys wat die mark opruim deurdat gebruikers toegelaat word om die hele beskikbare voorraad op te neem. Die prys op hierdie wyse vasgestel, moet 'n doeltreffende en ekonomiese prys vir water in daardie spesifieke gebied en vir die gespesifiseerde watergebruik wees. Die skaarsheidswaarde van water sal nou implisiet weergee word in die botte wat deur mededingende watergebruikers gemaak word.

Voornemende permithouers sal dus met mekaar om aansprake meeding en sodoende 'n proses fasiliteer van wegbeweeg vanaf die administratiewe vasstelling van eerstevlakpryse na 'n markgeöriënteerde benadering tot prysbepalings. Die idee van openbare veilings gaan egter nie so ver as die voorsiening van 'n volwaardige watermark nie omrede die permitte wat watergebruikaansprake verteenwoordig, nie vrylik onder mededingende watergebruikers verhandel sal word nie.

- **Watermarkte (artikels 25 en 26(1) van die Wet).** Verhandelbare watergebruikaansprake sal die verskuiwing van hoë- na laewaardegebruik van water bevorder en kan die behoefte aan administratief vasgestelde pryse uitskakel in die waterspanninggebiede waar daar 'n toenemende wateraanvraag is. Die voordeel daarvan om 'n watergebruiksreg verhandelbaar te maak, is dat dit 'n doeltreffende gebruiker toelaat om die gebruiksreg van 'n bestaande, maar minder doeltreffende, gebruiksreghouer te koop.

Die Nasionale Waterwet, 1998, maak daarvoor voorsiening dat watergebruikaansprake verhandel kan word. Die Wet erken egter dat alhoewel die verhandeling van aansprake tussen gebruikers die ekonomiese gebruik van water kan optimaliseer, dit weer aansienlike eksterne koste vir die res van die plaaslike ekonomie kan meebring. Verhandeling van watergebruikaansprake sal dus aan een of ander vorm van beheer onderworpe moet wees om openbare belange teenoor die belange van die kontrakterende partye te beskerm. Die nodige regulasies ingevolge artikel 26(l) van die Wet moet eers uitgevaardig word.

5.4 Deursigtigheid en Verantwoordingspligtigheid

Met die instelling van die prysbepalingstrategie, moet alle pogings aangewend word om koste te beheer deur die toepassing van gesonde finansiële bestuursbeginsels, soos streng begrotingsbeheer. Die nuwe prysbepalingstrategie omvat die beginsels van deursigtigheid, wat op sigself kostebeheer moet bevorder. Kragtens hierdie beginsel sal die volgende jaar se sektorale vorderings wat gedurende die begrotingsproses vir elke waterbestuursgebied ontwikkel word, na streekskantore aangestuur word vir verspreiding en bespreking met belanghebbende partye. Finale sektorale vorderings sal dan geformaliseer word en beskikbaar gestel word aan die streekskantore vir herverspreiding na die gebiedskantore voor die aanvang van die boekjaar.

Daarbenewens sal 'n opgesomde weergawe van die begrote bedryfsrekeninge vir die volgende jaar, met besonderhede oor geraamde tekorte en oorskotte van rekeninge, beskikbaar gestel word aan die streekskantore vir bespreking met die verteenwoordigende liggame van belanghebbende partye voor die aanvang van die boekjaar. Op soortgelyke wyse sal opgesomde bedryfsrekeninge wat werklike uitgawes en inkomste in vergelyking met begrotingsuitgawes en -inkomste vir die jaar weergee, by die streekskantore beskikbaar gestel word. OBA's moet soortgelyke rekeningkundige praktyke instel.

6 INFASERING VAN DIE NUWE BENADERING

6.1 Inleiding

Die beginpunt vir die infasering van die nuwe prysbepalingstrategie is die erkenning dat daar fundamentele verskille is tussen watergebruiksvordering vir a) befondsing van waterhulpbronbestuur, b) befondsing van waterhulpbronontwikkeling, en c) die bewerkstelling van billike en doeltreffende toewysing van water.

Dit is belangrik om daarop te let dat alhoewel waterhulpbronbestuur sowel as waterhulpbronontwikkeling en gebruik van waterwerkevorderings finansiële koste weergee, vereis die logiese verskil tussen hulle dat hulle geskei moet word. Waterhulpbronontwikkeling en gebruik van waterwerkevorderings word net gehef op die gebruikers van spesifieke Staatswaterskema of -stelses, en skemas befonds deur waterbestuursinstellings, en is gebaseer op die koste verbonde aan daardie skema. Waterhulpbronbestuursvorderings, daarenteen, hou verband met alle water benut binne die waterbestuursgebied en moet dus van alle watergebruikers gevra word, ongeag of water uit 'n waterskema voorsien word al dan nie.

Laastens, wanneer dit ingestel word, sal 'n vordering vir die bewerkstelling van 'n billike en doeltreffende toewysing van water nie 'n finansiële koste nie, maar eerder 'n ekonomiese koste weergee, waarvan die oogmerk sal wees om as aansporings te dien vir water wat toegewys moet word aan diegene wat 'n hoë waarde daarop plaas. Net soos die waterhulpbronbestuursvordering, sal so 'n vordering gebied-spesifiek wees en in waterstresgebiede van toepassing wees.

Uit bogemelde is dit duidelik dat 'n fundamentele beginsel onderliggend aan die voorgestelde prysbepalingstrategie dié is dat dit uiteindelik op alle water van toepassing moet wees, nie net op water wat tans uit Staatswaterskemas voorsien word nie.

6.2 Infasering van die verskillende vorderings

Die infasering van die voorgestelde waterprysbepalingstrategie sal so gestruktureer moet word dat dit die gefaseerde implementering van die Nasionale Waterwet, 1998, volg. Die proses vir infasering kan soos volg opgesom word:

Waterhulpbronbestuursvorderings

Die instelling van waterhulpbronbestuursvorderings sal stadiger moet geskied as die instelling van waterhulpbronontwikkeling- en gebruik van waterwerkevorderings (sien hieronder), aangesien die registrasie van watergebruik in waterbestuursgebiede 'n voorvereiste is vir die volledige implementering daarvan. Die huidige situasie is dat opvanggebiedbestuursvorderings in verband met die waterhulpbronbestuursfunksies van waterbewaring (verwydering van indringerplante en wateronkruid) en waterbenutting (onttrekkings-, bergings- en bebossingspermitbeheer) reeds vir watergebruikers by sekere Staatswaterskemas ingestel is. Registrasie sal geprioritiseer word in die waterbestuursgebiede wat die opvanggebiede van daardie skemas bevat sodat alle watergebruikers se vorderings op 'n billike wyse heef kan word.

Waterhulpbronbestuursvorderings sal ingestel word sodra die grootste deel van bestaande watergebruik in prioriteitswaterbestuursgebiede geregistreer is.

Waterhulpbronontwikkeling en gebruik van waterwerkevorderings

Die infasering van volledige finansiële kosteverhaling vir water verkoop uit staatskemas, kan vinniger ingestel word aangesien die gebruikers daarvan maklik identifiseerbaar is. Dit sal gedoen moet word terwyl staande ooreenkomste met spesifieke gebruikersgroepe en aanpassingsbeperkinge in gedagte gehou moet word (sien Deel 7 hieronder).

Vorderings vir bewerkstelliging van billike en doeltreffende toewysing van water

Soos reeds hierbo gemeld, sal vorderings betreffende die befondsing van waterhulpbronbestuur en waterhulpbronontwikkeling en gebruik van waterwerke 'n belangrike bydrae lewer tot die bewerkstelliging van billike en doeltreffende toewysing van water. By Staatswaterskemas sal die bate-opbrengstvorderings gebruik word as 'n ekonomiese aansporing om water te bewaar, deur die instelling van trap-tariefstrukture. Die instelling van bykomende ekonomiese aansporings sal dus nie gou geskied nie. Die rede hiervoor is die erkenning dat dit voortydig sou wees om ekonomiese prysbepaling in te stel voordat die effek van volledige finansiële prysbepaling van water op hulpbronbenutting geëvalueer is.

Die instelling van 'n vordering om billike en doeltreffende toewysing van water te bewerkstellig, sal soos volg geskied:

- In waterstres-gebiede waar verpligte lisensiëring bereik is, kan enige oorblywende water wat toegewys kan word, geprys word deur die openbare veilingsproses beskryf in 5.3.3.
- Die vasstelling van 'n ekonomiese vordering op 'n administratiewe wyse, gebaseer op die geleentheidskoste van water, sal slegs oorweeg word vanaf die datum waarop die tydperk van verpligte lisensies in waterbestuursgebiede verstryk het.

Om die voordelige gebruik van water te bevorder, sal DWB ook die verhandeling van watergebruik tussen individue reguleer.

7 TOEPASSING VAN PRYSBEPALINGSTRATEGIE OP VERSKILLEND KATEGORIEË WATERGEBRUIK / GEBRUIKERSEKTORE

Artikel 56 van die Nasionale Waterwet, 1998, maak ook voorsiening vir die prysbepalingstrategie om op 'n billike basis te onderskei tussen –

- verskillende tipes geografiese gebiede (a 56(3)(a)(i))
- verskillende kategorieë watergebruik (a 56(3)(a)(ii))
- verskillende watergebruikers (a 56(3)(a)(iii)).

Hierdie differensiasie word hierna in besonderhede bespreek met betrekking tot die hoofkategorieë watergebruik / watergebruikers.

7.1 Afvalstorting

Storting in 'n waterhulpbron van afval of water wat afval bevat, word ook in artikel 56(5) van die Wet omskryf as 'n watergebruik waarvoor vorderings heffing kan word. Die DWB beoog die ontwikkeling en implementering van 'n afvalstorting-prysbepalingstelsel wat op die "besoedelaar betaal"-beginsel (BBB) gebaseer sal wees ten einde ekonomiese aansporings te voorsien om waterbesoedeling te verlaag tot die vlak met die minste koste vir die gemeenskap as geheel.

Die afvalstorting-prysbepalingstrategie sal deel uitmaak van die instelling van vorderings vir die bewerkstelling van billike en doeltreffende toewysing van water ingevolge artikel 56(2)(c) van die Wet en sal afsonderlik wees van die waterhulpbronbestuurvordering ten opsigte van watergehaltebestuur.

'n Afsonderlike projek is in 1999 geïnisieer om die prysbepalingstrategie vir afvalstortings te ontwikkel. Dit sal insluit die bepaling van toekomstige vorderings vir punt- en verspreide bronne van besoedeling, gebaseer op die "besoedelaar betaal"-beginsel. Dit sal maatreëls

insluit wat die koste van waterbesoedeling internaliseer, asook ekonomiese aansporings en ontmoedigings om die vermindering van afvalstorting te bevorder. Die prysbepalingstrategie in hierdie verband sal mettertyd vir openbare kommentaar ontwikkel en gepubliseer word.

7.2 Waterdienste-owerheidsektor

1) Gratis rouwater vir basiese menslike behoeftes

Artikel 56(6)(c) van die Wet bepaal dat die Minister, met die vasstelling van 'n prysbepalingstrategie vir watergebruikvorderings, oorweging moet skenk aan die nodige maatreëls vir die instelling van tariewe by waterdienste-owerhede ingevolge artikel 10 van die Wet op Waterdienste, 1997, en die gebruik van oorlewingstariewe en progressiewe bloktariewe.

Kragtens hierdie prysbepalingstrategie vir rouwatergebruikvorderings, sal daar aan bogemelde vereiste voldoen word deur die benodigde rouwater vir basiese menslike behoeftes (omskryf as die noodsaaklike behoeftes vir drinkwater, voedselvoorbereiding en persoonlike higiëne, wat op 25 liter per capita per dag gestel word) gratis aan waterdienste-owerhede te voorsien. Die hoofdoelmerk van hierdie strategie is om die instelling van gedifferensieerde oorlewingstariewe op derdevlak te bevorder deur te verseker dat die eerste trap van 'n progressiewe bloktariefstruktuur om in die basiese behoeftes-komponent van huishoudelike gebruikers van plaaslike regerings te voorsien, die rouwatervordering of gedeelte daarvan sal uitsluit, soos bepaal ingevolge Hoofstuk 5 van die Wet.

Die rouwaterprysbepalingstrategie maak daarvoor voorsiening dat die koste van water-vanaf-die-bron vir voorsiening in basiese menslike behoeftes in die gebiede van waterdienste-owerhede gedra word deur die "ekonomiese gebruikers" van die betrokke waterbestuursgebied, -stelsel of staatswateropgaarwerke. Dit sluit in die gebruik van water bokant die basiesebehoeftekomponent in plaaslike regeringsgebiede.

Die implikasie van hierdie bepaling vervat in hierdie rouwater-prysbepalingstrategie is dat die koste van water-vanaf-die-bron vir basiese menslike behoeftes nie kruis-gesubsidieer sal word binne die waterdienste-owerheidsektor alleen nie, maar deur alle gebruikersektore binne 'n spesifieke waterbestuursgebied, Staatsskema of -stelsel. Dit sal lei tot verhogings van die sektorale rouwatervorderings wat van toepassing sal wees indien die basiese behoefteskomponent nie gratis voorsien word nie.

Ten einde die betrokke sektorale rouwatervorderings te bereken wat in elke waterbestuursgebied, -stelsel of -skema gehef moet word, moet inligting geredelik oor die jaarlikse basiesebehoeftevereiste van elke waterdiensowerheid beskikbaar wees. Hierdie inligting kan verkry word uit waterdiensontwikkelingsplanne (WDOP) opgestel ingevolge die Wet op Waterdienste, 1997, maar moet ook aan verifiëring onderworpe wees. Die voorgeskrewe prosedures om toegang tot gratis hoeveelhede rouwater te verkry, sal verseker dat realistiese ramings van basiesebehoeftevereistes voorsien word en ook dat geen rouwater gratis voorsien sal word tensy die betrokke plaaslike owerheid homself nie tot die implementering van oorlewingstariewe verbind het nie.

Die volgende prosedure word voorgeskryf vir die implementering van die onttrekking/voorsiening van gratis rouwater deur/aan waterdienste-owerhede:

- Waterdienste-owerhede kan skriftelik by die verantwoordelike owerheid aansoek doen om die gratis rouwatertoewysings uit waterhulpbronne of Staatsopgaardamme nadat hulle die inligting voorsien het wat vervat is in die konsep-WDOP vereis ingevolge artikel 13 van die Wet op Waterdienste, 1997. Spesifieke inligting wat saam met die aansoek voorsien moet word, is die volgende:
 - Huishoudelike gebruikerbevolking (slegs permanente inwoners) en verwagte groeikoers.
 - Totale jaarlikse watergebruik en verwagte groeikoers.
 - Besonderhede van die lewering van eie bronne en die verwagte jaarlikse voorraad uit enige Staatsopgaardam of stelsel.
 - Skriftelike verklaring van voorneme van die instelling van oorlewingstariewe ingevolge die Waterdiensteregulasies.

Die aansoek moet geroeteer word deur en ondersteun word deur die betrokke tweedevlak-massaverskaffer of Waterraad, waar van toepassing, wat die verantwoordelikheid moet hê om die aansoeke te koördineer.

- Die verantwoordelike owerheid sal dan die eerste jaarlikse hoeveelheid rouwater bepaal wat gratis na die betrokke waterdienste-owerhede moet deurgaan. In gevalle waar 'n massaverskaffer of waterraad en/of die plaaslike owerheid sy eie bronne het en aanvullende water uit 'n Staatsdam of -stelsel voorsien word, sal die hoeveelheid gratis water bepaal word as daardie gedeelte van die basiese behoeftevereiste wat uit die Staatsdam of -stelsel voorsien moet word en wat gebaseer sal word op die persentasie wat die vereiste voorsiening uit die Staatsdam of -stelsel van die totale jaarlikse aanvraag uitmaak.

Inligting oor moontlike gratis hoeveelhede water en huidige rouwatertariewe sal dan deur die verantwoordelike owerheid deurgegee word aan die betrokke waterdiensowerheid, met die versoek om –

- (a) tariewe vas te stel in ooreenstemming met die Tariefregulasies vir Waterdienste wat ingevolge artikel 10(1) van die Wet op Waterdienste, 1997, uitgevaardig gaan word; en
 - (b) die tarief op die eerste blok van die stelsel van stygende bloktariewe vir huishoudings te verminder ten einde die subsidie voorsien deur die gratis watertoewysing, in te sluit.
- Die gevolglike bloktariefstruktuur moet dan aan die verantwoordelike owerheid voorgelê word vir goedkeuring van die gratis watertoewysing. Navolging van stygende bloktariefstrukture soos vereis ingevolge die geregleerde norme en standaarde gestel deur die Minister ingevolge artikel 10(1) van die Wet op Waterdienste, 1997, is 'n voorvereiste

vir 'n gratis rouwatertoewysing. Die essensie van die strategie sal ook in gemelde waterdiensteregulasie weergegee word.

- Slegs daardie waterdienste-owerhede wat om gratis rouwatervoorraad vir basiese behoeftes aansoek gedoen het, sal vir sodanige doeleindes oorweeg word en die betrokke gratis hoeveelhede vir daardie owerhede en gevolglike sektorale vorderings vir die res van die waterbestuursgebied, -skema of -stelsel sal jaarliks gepubliseer word wanneer die vorderings geformaliseer word.
- Ouditering sal plaasvind deur inligting wat deur waterdienste-owerhede voorsien moet word kragtens die regulasies wat uitgevaardig gaan word ingevolge artikel 9 van die Wet op Waterdienste, 1997.
- Waar waterrade of ander massawaterverskaffers betrokke is, sal die betrokke liggaam die massatoewysing van gratis rouwater ontvang wat na die kwalifiserende plaaslike owerhede deurgegee moet word.

Die beginsel van subsidiëring van die basiese menslike behoefte-komponent van huishoudelike watergebruik in die gebiede van waterdienste-owerhede sal van toepassing wees op vorderings om waterhulpbronbestuurskoste te verhaal en ook op vorderings betreffende die ontwikkeling en bedryf van Staatsdamme en toekomstige damme wat deur die Opvanggebiedbestuursagentskappe besit gaan word.

2) Waterhulpbronbestuursvorderings

Die huidige metode vir die bepaling van opvanggebiedbestuursvorderings vir water voorsien uit Staatswaterskemas – in verband met die geraamde proporsionele aktiwiteitskoste van waterbewaring (verwydering van indringerplante en wateronkruid) en waterbenutting (onttrekking-, opgaring- en bebossingspermitbeheer) – is in ooreenstemming met die nuwe strategie en sal voortgesit word. Aanpassings sal egter gemaak word nadat die registrasie van alle watergebruikers in die spesifieke opvanggebiede afgehandel is en meer akkurate data oor sektorale watergebruik beskikbaar gestel word (tans word die omvang van watergebruik in die betrokke opvanggebiede op ramings gebaseer).

Vorderings vir die volle verhaling van die ander toegewysde waterhulpbronbestuurskoste ingevolge 5.3.1 sal ingestel word sodra die meerderheid watergebruikers in die spesifieke waterbestuursgebied waarin die skema geleë is, geregistreer is. Waterhulpbronbestuursvorderings vir die waterdienste-owerheidsektor sal ook die feit weergee dat slegs die "ekonomiese" gebruike van water uit die waterbestuursgebied, -skema of -stelsel tot kosteverhaling sal bydra (d.w.s. basiese menslike behoeftes uitgesluit).

3) Waterhulpbronontwikkeling- en gebruik van waterwerke-vorderings

Hierdie vordering sal gebaseer wees op die metode beskryf in 5.3.2. Die bepaling van eenheidskoste vir water voorsien uit Staatswaterskemas, gebaseer op die veronderstelde-lening-benadering, sal vervang word deur bepaling van die eenheidskoste deur die voorgestelde nuwe benadering (depresiasie en bate-opbrengs) soos in hierdie strategie uiteengesit. Die beginsel van uitsluiting van die watervereistes vir basiese menslike behoeftes vir doeleindes van die

vasstel van eerstevlakpryse sal ingestel word soos in 1) hierbo beskryf. Hierdie vordering sal vanaf April 2000 ingestel word.

'n Maksimum verhoging gelyk aan die produsenteprysindeks (PPI) + 10% oor huidige tariewe vir die eerste aantal jare van die nuwe prysbepalingstrategie sal geïmplementeer word. In die oorskakeling vanaf huidige na nuwe watergebruiksvorderings mag geen vermindering van vorderingsvlakke plaasvind nie. Die oogmerk is om die teikenvorderings binne tien jaar te bereik. Daarna sal jaarlikse tariefverhogings tot die inflasiekoers beperk word.

7.3 Nywerheid-, Mynbou- en Energiesektor

Die toepassing van die eerstevlak-prysbepalingstrategie op hierdie sektor sal identies wees met dié van die waterdienste-owerheid, behalwe vir die aspek van hantering van basiese menslike behoeftes. Die instelling van die waterhulpbronbestuursvordering sal gebaseer wees op volledige kosteverhaling deur kosteheffing vir "ekonomiese" gebruike van water in die waterbestuursgebied en sal na registrasie van watergebruike in die gebied geïmplementeer word. Die waterhulpbronontwikkeling en gebruik van waterwerkevorderings sal onderworpe wees aan verhogings van die PPI + 10% oor huidige tariewe vir die eerste aantal jare vanaf April 2000 en verder. Die oogmerk is om binne tien jaar die teikenvorderings te bereik. Daarna sal jaarlikse tariefverhogings tot die inflasiekoers beperk word. Tariewe sal nie onder die vlak van die vorige jaar verlaag word nie.

7.4 Besproeiingsektor

Gevestigde skemas en kommersiële boere

1) Bestaande ooreenkoms met SALU

In 1995 is daar met die Suid-Afrikaanse Landbou-unie (SALU) onderhandel oor 'n strategie vir tariewe wat op Staatsbesproeiingskemas gehef gaan word. Hierdie strategie is op die volgende beginsels gebaseer:

- Volledige verhaling van bedryfs- en instandhoudingskoste (B&I) plus opvanggebied-bestuurskoste, plus
- 'n toeslag op bogemelde koste om onderverhaling tydens droogtes teen te werk, plus
- 'n bedrag waaroor ooreengekom is om toekomstige koste aan vervanging, verbetering en dreineringswerke te dek. Voor die konstruksie van enige verbetering of dreineringswerke sal onderhandelings betreffende die terugbetaling op 'n *ad hoc*-basis met die betrokke Advieskomitee of Besproeiingsraad moet plaasvind.

Om stukrag aan die implementering van die strategie te verleen, is daar verder ooreengekom dat tariefverhogings vanaf 1996/97 en verder geleidelik en eenvormig op die volgende grondslag in werking gestel sal word:

- Die volledige verhalings van jaarlikse bedryfs-, instandhoudings- en huidige dreinerings-/verbeteringskoste, plus 'n 10%-toeslag, moet binne vyf jaar by elke skema bereik word, d.w.s. teen die einde van die 2000/2001 boekjaar.
- Die volgende opvanggebiedbestuurskoste sal by die B&I-koste gevoeg word: onttrekkings- en opgaringsbeheer, bebossingspermitbeheer, die Werk-vir-Water-program (gesubsidieer met 90% as gevolg van daaropvolgende vertoë aan die Minister), en wateronkruidbeheer.
- Verhogings vir 1996/97 sal gebaseer wees op een vyfde (20%) van die verskil tussen die geraamde 1996/97-koste plus 10% en die 1995/96-tariewe. Vir die volgende vier jaar sal die verhogings gebaseer wees op een vierde, een derde, die helfte en volle verhalings van die ooreenstemmende verskille tussen koste en tariewe soos jaarliks herbereken.
- Op skemas waar die huidige tariewe reeds die volgende jaar se koste plus 10% oorskry het, sal tariewe teen die huidige vlak bly.
- 'n Maksimum jaarlikse verhoging van 50% op die huidige tariewe sal van toepassing wees.

2) Waterhulpbronbestuursvorderings

Volledige verhalings van waterhulpbronbestuurskoste moet bereik word in 'n gefaseerde benadering. Die ooreenkoms wat met die SALU bereik is, maak voorsiening daarvoor dat die toegewysde koste vir die Werk-vir-Water-program (waterbewaring) met 90% gesubsidieer word vanweë die feit dat hierdie aktiwiteit slegs die sekerheid van voorsiening aan hierdie sektor sal verhoog en nie bykomende toewysings moontlik sal maak nie. Die opvanggebiedbestuursaktiwiteitskoste betreffende waterbewaring (beheer van indringerplante en wateronkruid) en waterbenutting (opgaring-, onttrekkings- en bebossingspermitbeheer) wat reeds ingestel is, plus 'n 10%-toeslag (om rekenskap te gee van onderverhalings van koste tydens droogtejare), sal uitgefaseer word saam met bedryfs- en instandhoudingskoste, om teen Maart 2001 ten volle verhaal te wees. Daarna sal die ander waterhulpbronbestuurskoste ingevolge hierdie strategie ook vir prysbepalingsdoeleindes ingestel word, maar slegs nadat die meerderheid watergebruikers in 'n spesifieke waterbestuursgebied geregistreer is.

3) Waterhulpbronontwikkeling en gebruik van waterwerkevorderings

In ooreenstemming met 'n ooreenkoms tussen DWB en die SALU, in 1) hierbo beskryf, sal alle bestuurs-, bedryfs-, instandhoudings- en huidige opknappingskoste, saam met sekere waterhulpbronbestuurskoste plus 'n 10%-toeslag, ten opsigte van bestaande Staatskemas teen Maart 2001 verhaal wees, deur die geleidelike uitfasering van die subsidie oor 'n vyfjaartydperk. Die ooreenkoms maak ook voorsiening vir die volledige verhalings van toekomstige opknappings- en verbeteringskoste. Hierdie ooreenkoms sal voor April 2001 hersien word, vanaf welke datum die instelling van 'n depresiasievordering op bestaande skemas, in ooreenstemming met 5.3.2 van hierdie prysbepalingsstrategie, oorweeg sal word. Hierdie depresiasiekomponent sal die verpligting om kragtens die huidige ooreenkoms vir die toekomstige vervanging, verbetering en dreineringskoste te betaal, vervang.

Dit is nie DWB se beleid om nuwe Staatsbesproeiingskemas te ontwikkel nie. Waar 'n opgaardamskema vir ander doeleindes ontwikkel word en gevestigde besproeiingsboere deur 'n verhoogde sekerheid van voorsiening bevoordeel sal word, sal die volle bedryfs- en instandhoudingskoste betaalbaar wees. Nuwe boere sal toegang verleen word of bestaande

boere sal toegelaat word om uit te brei op voorwaarde dat die volle finansiële koste (B&I plus depresiasie plus bate-opbrengs) vir sodanige nuwe ontwikkeling betaalbaar sal wees.

4) Infasering van vorderings

Totale bestaande tariewe sal geleidelik verhoog word totdat volle verhaling van die SALU-onderhandelde koste teen Maart 2001 bereik is. Die maksimum jaarlikse verhoging van bestaande tariewe sal tydens hierdie tydperk beperk word tot 50% van die vorige tarief. Tariewe sal ook nie in enige jaar verminder word nie. Vanaf April 2001 moet die ander waterhulpbronbestuursaktiwiteit-eenhedskoste vir waterhulpbronbestuur en 'n depresiasiekomponent van waterhulpbron-ontwikkelingskoste by die vordering gevoeg word. Voorwaardes van 'n nuwe ooreenkoms in hierdie verband sal met die volle spektrum van georganiseerde besproeiingslandbou (nie slegs die SALU nie) onderhandel word.

Voormalige tuisland-skemas en opkomende besproeiingsboere

Met die herstel van die wanbalanse ten opsigte van besproeiingsboerdery in die verlede, moet daarop gelet word dat die Staat daartoe verbind is om benadeelde individue en gemeenskappe te ondersteun deur middel van grondherstel, grondhervorming, en ander programme van korrektiewe optrede. Dit kan insluit konsessietydperke waartydens die volledige koste van water, gebaseer op die benadering voorgestel in hierdie dokument, nie gehef word nie. 'n Infaseringstydperk van vyf jaar vir opvanggebiedbestuur plus die gebruik van waterwerkvoororderings op Staatsbesproeiingskemas word voorgestel, ten einde die strategie in ooreenstemming te bring met huidige praktyk op gevestigde skemas.

Die volgende strategie sal toegepas word op die prysbepaling vir voormalige tuisland-besproeiingskemas en opkomende boere wat toegang verleen is tot gevestigde of nuwe Staatswaterskemas:

- Verbeteringskoste by voormalige tuisland-Staatswaterskemas wat water aan opkomende boere van die histories benadeelde groepe voorsien; moet aanvanklik nie vir prysbepalingsdoeleindes in ag geneem word nie. Die rede vir die uitsluiting hiervan is dat die meeste van die Staatswaterskemas in die voormalige tuislande in 'n erg vervalde toestand is vanweë jare se verwaarloosing van instandhouding. Die opvanggebiedbestuurs- en bedryfs- en instandhoudings-koste plus 'n toeslag van 10% soos vervat in die ooreenkoms met die SALU, moet oor 'n tydperk van vyf jaar ingefaseer word, beginnende met een vyfde van sodanige koste in die eerste jaar na registrasie of lisensiëring van die opkomende boere.
- Vir nuwe boere van die histories benadeelde groepe, wat toegang verleen word tot gevestigde of nuwe Staatswaterskemas, moet daar 'n infasering wees van die volle kosteverhaling van dieselfde koste toegewys aan gevestigde boere in terme van die onderhandelde ooreenkoms met die SALU. Dit moet ook oor 'n tydperk van vyf jaar geskied, beginnende na registrasie of lisensiëring.
- Toekomstige onderhandelinge oor die implementering van 'n depresiasiekoste wat voor 2001 met die SALU moet plaasvind, moet ook verteenwoordiging deur verteenwoordigende liggame van hierdie opkomende boere insluit. Die verdere infasering van die volledige vorderings in terme van die rouwaterprysbepalingstrategie moet dan oor dieselfde aantal jare vir sowel die kommersiële as opkomende boere gedoen word, maar oor verspreide tydperke vanweë verskillende aanvangsdatums.

- Gevestigde kommersiële boere van die histories benadeelde groepe, wie se bestaande besproeiingsontwikkeling gestabiliseer sal word deur enige nuwe Staatopgaardam wat vir ander doeleindes gebou is, sal aanspreeklik wees vir die betaling van die waterhulpbronbestuurs-vorderings, asook die bedryfs- en instandhoudingskoste van die dam, sonder subsidies.

Registrasie van besproeiingswatergebruik vir prysbepalingsdoeleindes

'n Bestaande wettige watergebruik soos omskryf in artikel 32 van die Wet, kan voortgesit word totdat die verantwoordelike gesag vereis dat die watergebruik gelisensieer moet word. Aangesien die omvang van bestaande wettige gebruik in baie gevalle nie gekwantifiseer is deur middel van die magtigings verleen ingevolge wetgewing wat in werking was onmiddellik voor hierdie Wet in werking getree het nie, bemagtig die Wet die verantwoordelike gesag om die omvang van sodanige bestaande wettige gebruik deur middel van die registrasieproses aan te teken, onderworpe aan regulasies uitgevaardig ingevolge artikel 26(1)(c) van die Wet.

Die nodige regulasies wat as riglyn vir die registrasie van bestaande watergebruik moet dien, sal uitgevaardig word. Hierdie regulasies sal die DWB in staat stel om vanaf Oktober 1999 bestaande wettige gebruik in alle waterbestuursgebiede te registreer ten einde die doeltreffende toewysing en bestuur van watergebruik en waterwerke en die heffing van vorderings soos uiteengesit in die prysbepalingstrategie, te fasiliteer. Ingevolge artikel 59(2) van die Wet moet enige persoon wat ingevolge 'n regulasie kragtens artikel 26 geregistreer is, of wat 'n lisensie het om water te gebruik, watergebruikvorderings betaal.

Vir prysbepalingsdoeleindes moet besproeiërs wat nie voorsien word uit waterwerke in besit van die Staat of waterbestuursinstellings nie, geregistreer word vir hul geraamde gemiddelde jaarlikse volumetriese watergebruik, wat gebaseer sal word op die besproeiingswaterbehoefte van daardie gewasse en besproeiëde gebiede wat hul geregistreerde bestaande wettige gebruik uitmaak en die geraamde waterverliese veroorsaak deur hul geregistreerde op-plaas-besproeiingstelsels. Op Staats- of WUA-skemas sal die watergebruik as 'n eenheid op die skema geregistreer word en sal gebaseer word op die som van die individuele volumetriese toewysings by die kant van die lande, aangepas vir versekering van lewering om langtermyn gemiddelde jaarlikse gebruik te verteenwoordig, plus gemiddelde jaarlikse verspreidingsverliese op gemeenskaplike infrastruktuur.

Die volgende metodes sal deur DWB gebruik word om die volumetriese omvang van gemiddelde jaarlikse watergebruik van individuele besproeiërs vir prysbepalingsdoeleindes te bepaal, gebaseer op inligting voorsien op die amptelike registrasieaansoekvorms:

• Besproeiingsbehoefte

Die jaarlikse besproeiingsbehoefte (die hoeveelheid water wat op die grondoppervlak versprei moet word) word bereken deur die gemiddelde jaarlikse effektiewe reënval (daardie deel van die reënval wat effektief besproeiing vervang) af te trek van die gemiddelde jaarlikse gewas-waterbehoefte (die minimum hoeveelheid water nodig vir optimale plantgroei vir die spesifieke gewas by die spesifieke ligging).

Die volgende prosedure moet gevolg word om die besproeiings-waterbehoefte te bereken:

Die SAPWAT-rekenaarprogram wat tans onder die beskerming van die Watervorsingskommissie ontwikkel word, en die internasionaal aanvaarde Penman-Monteith-klimaatmodel vir gewaswaterbehoefte soos ontwikkel deur die FAO, plus die effektiewe reënval vir verskillende gewasse by 350 weerstasies oor die hele land, sal gebruik word vir 'n raming van die besproeiingsbehoefte vir dié gewasse gemeld in die program, by enige plek in Suid-Afrika. Die weerstasie met klimaatskenmerke wat die naaste is aan dié wat op die spesifieke plaas ondervind word, sal gekies word, en vir gewasse nie in die program gemeld nie, sal 'n gewas met min of meer soortgelyke kenmerke in die model gekies word.

- **Op-land-besproeiingsverliese**

Die besproeiingstelsel wat gebruik word, het 'n mate van ingeboude verliese wat by die besproeiingsbehoefte gevoeg moet word sodat die totale hoeveelheid water wat gebruik word, vasgestel kan word.

Die volgende stelseldoeltreffendhede (wat verliese verklaar tussen die plaasdam en waar water op die grondoppervlak geplaas word) soos aangegee in die "*Irrigation Design Manual*", 1996, uitgegee deur die Landbounavorsingsraad, sal gebruik word:

Besproeiingsmetode	Stelseldoeltreffendheid
Vloed: Voor	65%
Vloed: Bedding	60%
Vloed: Bak	75%
Sprinkelaar: Sleptou	75%
Sprinkelaar: Gou-koppel	75%
Sprinkelaar: Permanent	85%
Sprinkelaar: Paddaspring	75%
Sprinkelaar: Kanonspuit	70%
Sprinkelaar: Kantrol	75%
Sprinkelaar: Swaaibalk	75%
Sprinkelaar: Kruispuit	75%
Sprinkelaar: Kruip-swaabalk	80%
Spilpunt	85%
Lineêr	85%
Mikrospuit	85%
Mikrosproei	90%
Drup	95%

• **Besproeiingsbestuur**

Indien geen besproeiingskedulering of enige ander metode ter verbetering van besproeiingsdoeltreffendheid gebruik word nie, is die bestuur van die spesifieke besproeiingstelsel nie optimaal nie en gaan 'n verdere hoeveelheid water verlore. 'n Hoeveelheid van 10% van die totale gebruik sal dan bygevoeg word.

Trapsgewys stygende watertariewe

Om waterbewaring te bevorder en die voordelige gebruik van water ingevolge die Nasionale Waterwet te bevorder, sal die instelling van trapsgewys stygende watertariewe vir besproeiing deel van die prysbepalingstrategie uitmaak. Die huidige ooreenkoms met die SALU betreffende die infasering van die verhaling van lopende uitgawes by skemas kan lei tot onderverhaling van koste indien trapsgewys stygende tariewe onmiddellik ingestel word, en kan so 'n onmiddellike instelling dus kontra-produktief wees. Die instelling van trapsgewys stygende tariefstrukture benodig ook verdere toegepaste navorsing en verfyning en kan verder doeltreffend toegepas word slegs waar watervoorsiening akkuraat gemeet en gemonitor word.

Die ontwikkeling van trapsgewys stygende tariefstrukture om waterbewaring te bevorder, sal ook deel uitmaak van die hersiene ooreenkoms wat met georganiseerde landbou aangegaan en vanaf April 2001 geïmplementeer sal word.

Staatsinstellings

Water wat uit Staatskemas vir besproeiingsdoeleindes voorsien word aan ander staatsdepartemente of instellings wat finansiële deur staatsdepartemente ondersteun word, sal 'n tarief gevra word wat gebaseer is op volledige finansiële kosteverhaling, sonder subsidiëring.

Aankoop van "ekstra water"

Die huidige beleid wat geskeduleerde besproeiërs op Staatswaterskemas toelaat om onder sekere voorwaardes "ekstra water" teen swaar gesubsidieerde pryse te koop, sal gestaak word. Slegs in uitsonderlike omstandighede, soos 'n onverwagse hittegolf, sal besproeiërs toegelaat word om bykomende water, bo en behalwe die kwotas, aan te koop. Die tarief vir sodanige ekstra water sal die rouwatertarief vir huishoudelike en nywerheidsvoorsiening wees.

7.5 Stroomvloeiverminderingsaktiwiteite

1) Waterhulpbronbestuurvordering

Ingevolge die Wet is bosbou as 'n stroomvloeiverminderingsaktiwiteit verklaar. Bestaande en nuwe bosbouplantasies sal vorderings vir waterhulpbronbestuur lok. Volledige verhaling van toegewysde waterhulpbronbestuurkoste kragtens 5.3.1, gebaseer op die totale geregistreerde gemiddelde jaarlikse volumetriese watergebruik, moet vir elke waterbestuursgebied bereik word. Die Wet maak voorsiening vir DWB om 'n volumetriese bepaling van water te maak wat toegeskryf word aan 'n stroomvloeiverminderingsaktiwiteit vir doeleindes van watergebruiktoewysing en die heffing van vorderings.

Waterhulpbronbestuursvorderings vir stroomvloeivermindering van kommersiële bosbouplantasies sal uitgedruk word in sente per kubieke meter vir elke waterbestuursgebied en die geregistreerde gemiddelde jaarlikse stroomvloeivermindervolume per watergebruiker sal die bedrae bepaal wat aan die verantwoordelike gesag betaalbaar is.

Die volumetriese bepaling van stroomvloeivermindering vir registrasiedoeleindes sal gebaseer word op die resultaat van die huidige stroomvloeivermindering-modelleringsprojek uitgevoer vir die Departement onder toesig van 'n bestuurskomitee waarop die bosboubedryf verteenwoordig is. Die resultate van hierdie navorsing, wat beoog om bestaande empiriese modelle te verfyn, sal in 2000 beskikbaar wees. Die model wat gebruik gaan word, sal gebaseer wees op die dokument "*The impacts of timber plantations on runoff in South Africa*" deur Le Maitre, Scott en Fairbanks, 1997, met inagneming van die verskillende spesies, gebiede beplant, ligging en gevolglike vogbeskikbaarheid in kwaternêre opvanggebiede.

2) Waterhulpbronontwikkeling- en gebruik van waterwerke-vordering

Hierdie vordering sal nie oor die algemeen van toepassing wees nie, tensy die sektor gewillig is om in te koop op die bou van opgaardamme om vir stroomvloeiverminderingseffekte te kompenseer.

8 SLOT

Hierdie dokument weergee 'n hulpbronprysbepalingsbenadering vir Suid-Afrikaanse water, gebaseer op finansiële en ekonomiese beginsels, met inagneming van die land se maatskaplike en ekologiese oogmerke. Dit het aangevoer dat voorsieningskantbenaderings om die probleem van waterskaarste op te los, bykans uitgeput is, en dat 'n geïntegreerde benadering, wat ook aanvraagkantmaatreëls bevat, die enigste lewensvatbare langtermynoplossing vir die bestuur van Suid-Afrika se waterhulpbronne verteenwoordig.

Die nuwe benadering tot waterprysbepaling erken dit en stel voor dat die volledige finansiële koste van eerstevlakwater uiteindelik van watergebruikers verhaal moet word. Waar nodig, kan hierdie finansiële vordering uiteindelik aangevul word deur 'n ekonomiese vordering in waterskaars opvanggebiede, ten einde die relatiewe skaarsheid van water as 'n kommoditeit op 'n gegewe tydstop en plek te weergee en om sodoende die doeltreffende toewysing en voordelige gebruik van water te bevorder.

Laastens sou dit voortydig wees om spesifieke tydsbepalings voor te skryf vir die infasering van 'n volledige ekonomiese prysbepaling in die afwesigheid van werklike data. Dit is egter belangrik om te onthou dat die land se skaars waterhulpbronne in groot gevaar verkeer indien die beweging na ekonomiese prysbepaling langer as wat absoluut nodig is, vertraag word.

9 WOORDELYS

Maatskaplike billikheid: In die konteks van waterhulpbronne, impliseer maatskaplike billikheid dat alle gebruikersgroepe regverdige en redelike toegang tot die nasie se skaars waterhulpbronne het, en dat die toewysing van waterhulpbronne universele en bekostigbare toegang tot 'n basiese watervoorraad fasiliteer.

Ekologiese volhoubaarheid: Hierdie idee behels die siening dat daar 'n behoefte is om ekologiese beskerming en deurlopende ekonomiese groei as wedersyds verenigbaar eerder as noodwendig botsende oogmerke te behandel.

Ekonomiese doeltreffendheid: 'n Toestand wat bereik word wanneer hulpbronne oor 'n gegewe tydperk op so 'n wyse gebruik word dat dit onmoontlik gemaak word om die welsyn van 'n persoon te verbeter sonder om 'n ander te benadeel.

Ekonomiese waarde: Die koste wat 'n artikel se skaarsheidswaarde verteenwoordig wat in mededingende markte sal heers

Ekonomie: Ekonomie is die wetenskap wat 'n studie maak van menslike gedrag as 'n verhouding tussen doeleindes en skaars middele wat alternatiewe gebruike het.

Eksternaliteite: Dit is hoofsaaklik aktiwiteite waarvan die volledige koste of voordeel nie in 'n ekonomiese besluit geïnkorporeer is nie; hulle lei dus tot sub-optimale maatskaplike toewysing.

Markbenadering: Dit is 'n aanvaarde middel waardeur kopers en verkopers op wedersyds aanvaarde voorwaardes kan kommunikeer en verhandel.

Markopruiming: 'n Toestand wat bereik word as die prys van die artikel wat verhandel word, aanpas sodat die hoeveelheid wat kopers wil koop, gelyk is aan die hoeveelheid wat verkopers wil voorsien.

Geleentheidskoste: Die koste van alternatiewe waarvan afstand gedoen word deur skaars hulpbronne op 'n spesifieke wyse te gebruik.

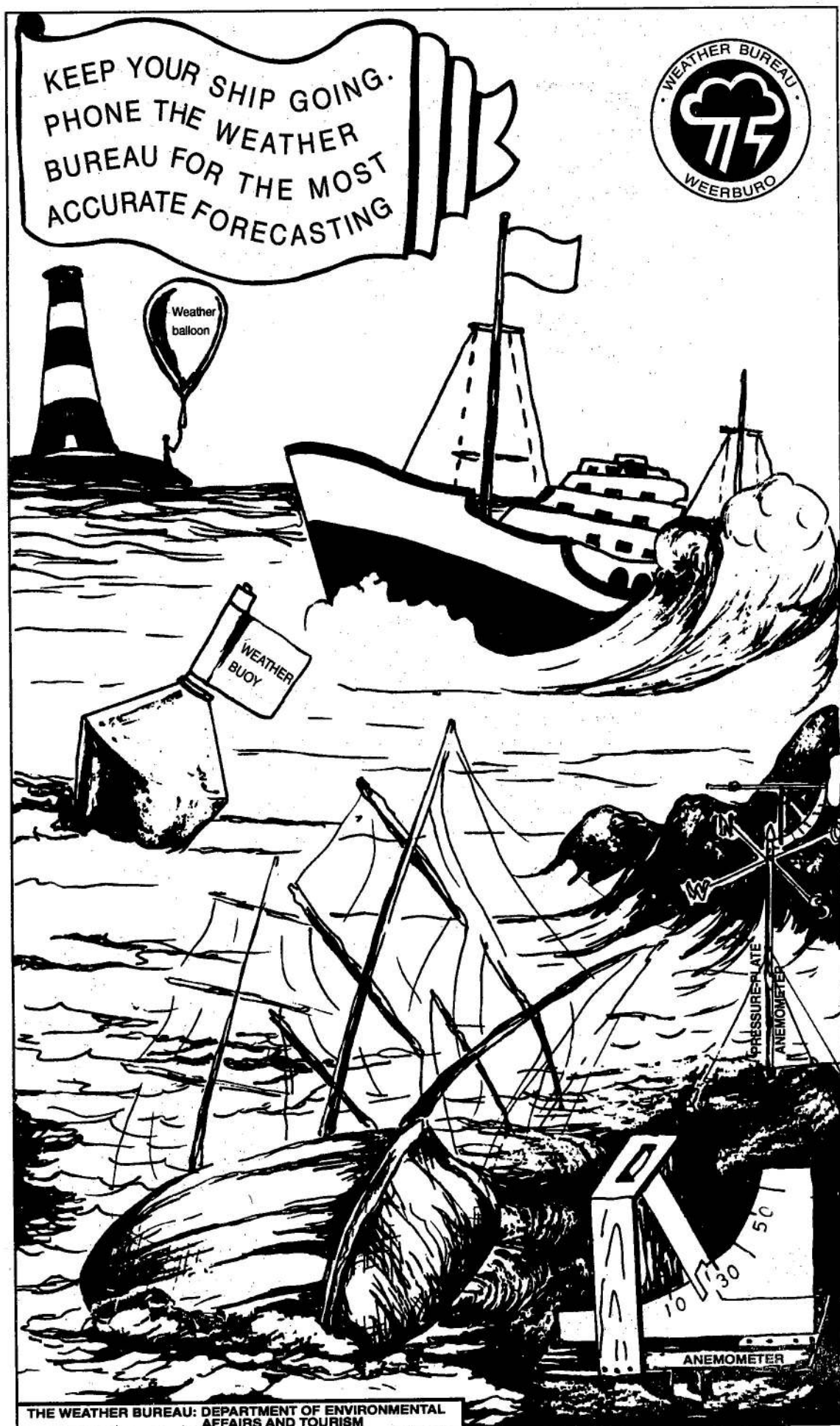
"Besoedelaar betaal"-beginsel: 'n Beginsel wat verseker dat 'n vordering per eenheid besoedeling wat in die ekosistels vrygelaat word, van diegene wat vir sodanige besoedeling verantwoordelik is gehef word, ten einde die koste daarvan te internaliseer.

Skaarsheid: Die situasie wat ontstaan wanneer aanvraag na enige gegewe artikel die voorsiening van daardie artikel oortref.

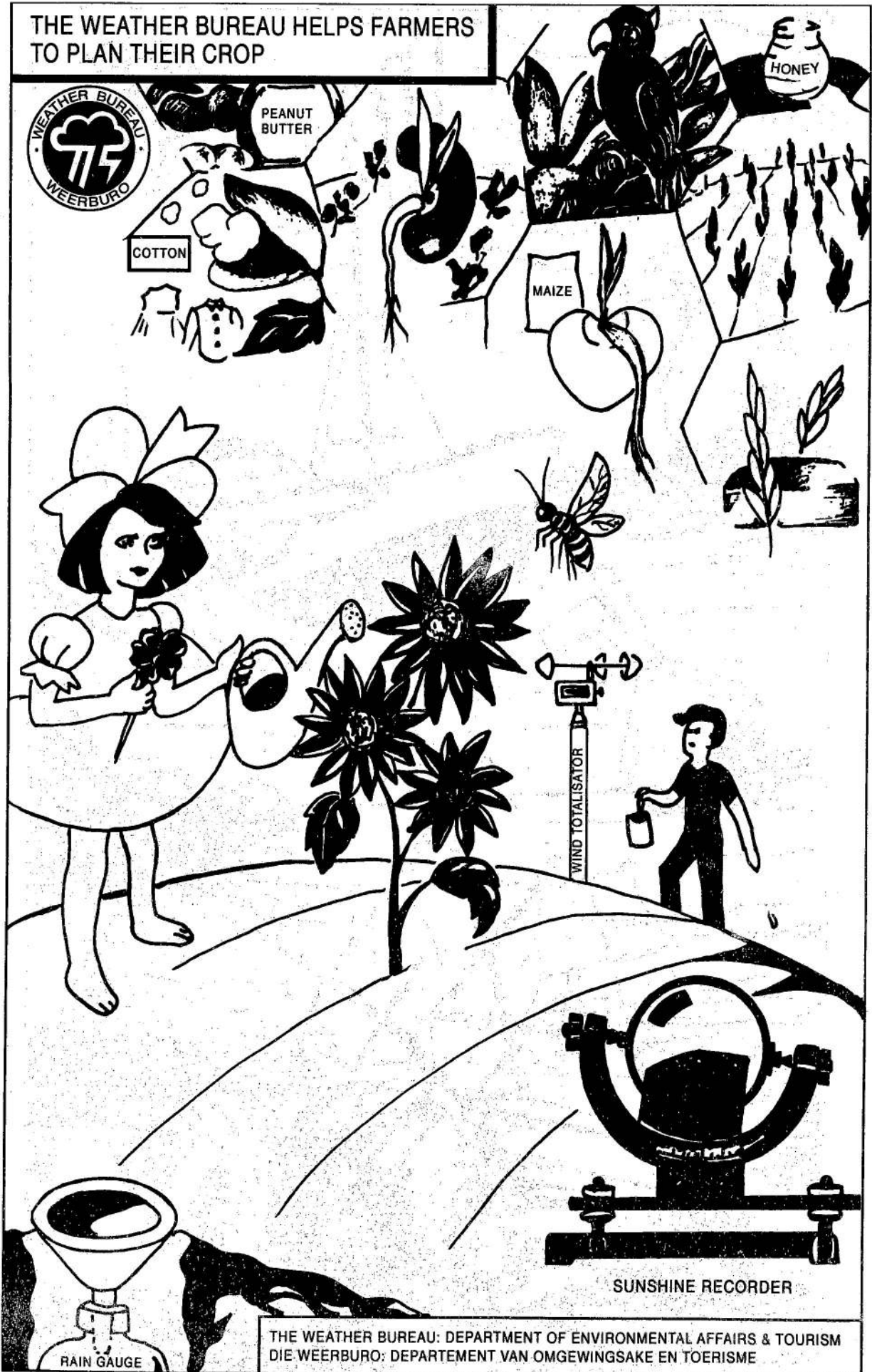
Watermark: 'n Mark waar water op dieselfde wyse as ander goedere verhandel word.

CONTENTS**INHOUD**

No.		Page No.	Gazette No.	No.		Bladsy No.	Koerant No.
GOVERNMENT NOTICE				GOEWERMENTSKENNISGEWING			
Water Affairs and Forestry, Department of				Waterwese en Bosbou, Departement van			
<i>Government Notice</i>				<i>Goewermentskennisgewing</i>			
1353	National Water Act (36/1998): Establishment of a pricing strategy for water use charges in terms of section 56 (1).....	2	20615	1353	Nasionale Waterwet (36/1998): Instelling van 'n prysstrategie vir water gebruik vorderings in terme van artikel 56 (1)	39	20615



THE WEATHER BUREAU HELPS FARMERS TO PLAN THEIR CROP



THE WEATHER BUREAU: DEPARTMENT OF ENVIRONMENTAL AFFAIRS & TOURISM
DIE WEERBURO: DEPARTEMENT VAN OMGEWINGSAKE EN TOERISME

Printed by and obtainable from the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001

Publications: Tel: (012) 334-4507, 334-4508, 334-4509, 334-4510

Advertisements: Tel: (012) 334-4673, 334-4674, 334-4504

Cape Town Branch: Tel: (021) 465-7531

Gedruk deur en verkrygbaar by die Staatsdrukker, Bosmanstraat, Privaatsak X85, Pretoria, 0001

Publikasies: Tel: (012) 334-4507, 334-4508, 334-4509, 334-4510

Advertensies: Tel: (012) 334-4673, 334-4674, 334-4504

Kaapstad-tak: Tel: (021) 465-7531