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GOVERNMENT NOTICES

DEPARTMENT OF WATER AFFAIRS AND FORESTRY**No. 201****16 March 2007**

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, Lindiwe Benedicta Hendricks, 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), gives power to the Minister with the concurrence of the Ministry of Finance, from time to time by notice in the Gazette to establish a pricing strategy for charges for any water use within the framework of existing relevant government policy.

The previous pricing strategy was published in November 1999 and since its publication there have been various developments that necessitate this review which include:-

- The implementation of the Municipal Finance Management Act
- Further developments to the Departmental computer system for charge administration
- The incorporation of the Waste Discharge Charging System
- Requests from stakeholders for a review of the strategy.
- Capital projects funded by private sector funding

The Pricing Strategy in addition to the above must also consider the development of Catchment Management Agencies, which will have a significant bearing on the way water resources are managed and protected.

This document sets the strategy for implementing water management practices according to the user pays and polluter pays principles and is the result of a process of consultation as required by the Act. Interested parties contributed to the final form of this document through their comments, which were considered and, where acceptable, incorporated into the strategy.

The measures adopted I believe have resulted in a document that takes into consideration the diverse and sometimes competing interest of various sectors while at the same time promoting efficiency and redressing the imbalance in access to water as a result of past laws.

Lindiwe Benedicta Hendricks, MP
Minister of Water Affairs and Forestry

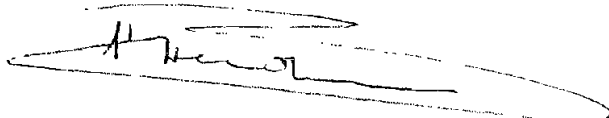


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ABBREVIATIONS

CMA	=	Catchment Management Agencies
CUC	=	Capital Unit Charge
DWAF	=	Department of Water Affairs and Forestry
GWS	=	Government Water Schemes
IAP	=	Invasive Alien Plant
NWA	=	National Water Act, 1998 (Act 36 of 1998)
NWRIA	=	National Water Resource Infrastructure Agency
NWRS	=	National Water Resource Strategy
O&M	=	Operations and Maintenance
PPI	=	Producer Price Index
ROA	=	Return on Asset
RQO	=	Resource Quality Objective
SFRA	=	Stream Flow Reduction Activities
TCTA	=	Trans Caledon Tunnel Authority
WARMS	=	Water Use Authorisation & Registration Management System
WDCS	=	Waste Discharge Charge System
WMA	=	Water Management Area
WMI	=	Water Management Institutions
WRC	=	Water Research Commission
WRDC	=	Water Resource Development Charges
WRM	=	Water Resource Management
WSDP	=	Water Services Development Plan
WUA	=	Water User Associations

1 INTRODUCTION

This document is the first revision and extension of the Pricing Strategy for raw water use charges which was published in the Government Gazette No. 1353 of 12 November 1999.

This strategy refers to pricing for the use of water from South Africa's water resources and not to the pricing of water services, which is dealt with separately under the Water Services Act, 1997. In other words, the approach deals with first tier water, i.e. the use of raw (untreated) water from the water resource and/or supplied from a government waterworks. 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 from 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 DWAF as well as by water management institutions as defined in the NWA.

2 LEGAL MANDATE

In terms of Section 56 of the NWA, the Minister may, with the concurrence of the Ministry of Finance, from time to time by notice in the Government Gazette, establish a pricing strategy for charges for any water use within the framework of existing relevant government policy.

The Pricing Strategy contains the objectives, methodology and implementation strategy for setting water use charges for purposes of:-

funding water resource management by DWAF and water management institutions, through water use charges, Section 56 (2) (a).

funding water resource development and use of waterworks by DWAF and water management institutions, Section 56 (2) (b).

achieving the equitable and efficient allocation of water, through a charge hereafter referred to as the "economic charge", Section 56 (2) (c).

providing for a differential rate for waste discharges, hereafter referred to as VDCS, Section 56 (5).

3 THE OBJECTIVES THAT SHAPE THE PRICING STRATEGY

The following objectives are of principal importance when formulating or amending the pricing strategy:

- Social equity

The Pricing Strategy for water use charges coupled to the granting of financial assistance will contribute to social equity and redress of the imbalances of the past, both with respect to equitable access to water supply services and direct access to raw water.

- Ecological sustainability

In terms of Chapter 3 of the NWA, the water needs for the effective functioning of aquatic ecosystems must be protected. The water required for the ecological reserve must be safeguarded and the cost of managing the Reserve must be paid for by all registered and billable users in terms of Section 56(2) (a) (iv) of the NWA. To promote the preservation of resource quality, the polluter pays principle for waste discharge is adopted in this pricing strategy.

- Financial sustainability

In order to ensure financial sustainability adequate revenue must be generated to fund the annual cost related to:

- the management of the country's water resources.
- the operations, maintenance, refurbishment and betterment of existing Government water schemes and waterworks owned by water management institutions.
- the development of new user-funded schemes.

The financial framework makes accommodation for the financial autonomy of WUAs and CMAs. As stated in the previous Pricing Strategy, the full financial cost of water resource management and supplying water should be recovered from water users, including the cost of capital. While it is important to keep water prices as low as possible, DWAF has to ensure that water is priced at levels consistent with efficient and effective delivery of services. This approach may be phased in by taking account of constraints of various sectors to adapt quickly to price increases.

- Economic efficiency

In the context of water scarcity, ensuring an efficient allocation of scarce water resources requires that the price of water is set to reflect its scarcity value, to ensure firstly that water is conserved and secondly that some water used for low-value purposes is redirected to alternative high value purposes. This can be done administratively or by using market related mechanisms. It is also critical to ensure that the water resource management systems implemented are cost effective and do not become an unnecessary financial

Permissible water use as described under Schedule 1 of the NWA and generally authorised. A person may use water in or from a water resource for purposes such as reasonable domestic use, non-commercial gardening, animal watering, fire fighting and recreational use, as set out in Schedule 1 of the NWA. General authorisations in terms of section 39 of the NWA also allow certain water uses not to register, which would then not be charged.

- **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 years horizon) needs of individuals served by the water resources concerned and includes water for drinking, food preparation and personal hygiene defined as 25

litres per capita per day. The Schedule 1 use contains a basic human needs component for certain individuals who access the water resources directly.

- **Ecological sustainability.** This represents the second component of the Reserve and refers to water (quantity and quality) required to protect the aquatic ecosystems of the water resources and ensure their sustainability.
- **International obligations.** The water required to meet South Africa's commitments regarding international waters will receive priority and will not be allocated for pricing purposes, except where specific agreements have been reached concerning the supply of water to neighbouring countries.

After the above claims have been met, the remaining water, including water imported from other water management areas by means of inter-basin transfer schemes can be made available for various uses. This water use is classified as productive use of water and is subject to pricing in terms of this strategy.

5 DEFINITIONS OF WATER USE

Section 56 of the NWA 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 stream flow reduction activity;
- (e) engaging in controlled activity which may have 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 for continuation of an activity;
- (k) using water for recreational purposes.

The above-mentioned water uses can be broadly grouped under three categories in the JWA:

Abstraction related uses

- Section 21 (a), Section 21 (b) and Section 21 (d)

Waste discharge related uses

- Section 21 (e), Section 21 (f), Section 21 (g), Section 21 (h) and Section 21 (j)

Non-consumptive uses

- Section 21 (c), Section 21 (e), Section 21 (i), Section 21 (j) and Section 21 (k)

The pricing strategy prioritises uses of water stated above, and over time will charge for most defined water use after consultations with stakeholders. Strategies are already in place and under review for abstraction related uses. With the implementation of the waste discharge charge system, most of the above-mentioned use will be charged for.

A strategy is also being developed for section 21 (k), recreational use and will form the subject of a separate publication.

6 FUNDING OF WATER RESOURCE MANAGEMENT

Water Resource Management expenditure relates to those activities that are required to protect, allocate, conserve, manage and control the water resources and manage water quality located within Water Management Areas (WMA). These costs do not relate only to water subject to pricing, but to the management of all water within a water management area. These costs could include but are not limited to the following activities:-

- Planning and implementing catchment management strategies.
- Monitoring and assessing water resource availability and use.
- Water use allocations.
- Water quantity management, including flood and drought management, water distribution, control over abstraction, storage and stream flow reduction activities.
- Water resource protection, resource quality management and water pollution control.
- Water conservation and demand management.
- Institutional development and enabling the public to participate in water resources management decision-making.

A more detailed description including a split between abstraction and waste discharge activities is provided later in this document.

Initially water resource management will continue to be the task of DWAF. However, the NWA clearly states that the intention is to create CMAs (the first of which have been established) to whom DWAF will delegate or assign significant water resource management functions (The activities of the CMAs will be funded largely from water resource management charges). In WMAs where CMAs do not exist, DWAF will function as the CMAs until they are established. Regional offices will undertake WRM functions in WMAs where not all functions have been delegated to CMAs due to a lack of capacity. In WMAs where both DWAF and CMAs are performing WRM functions, income will be shared pro-rata to input cost and this split will be reflected in all sectoral charges.

6.1 Budgeting of activity costs

DWAF/CMAs will budget annually for the estimated costs of activities to be performed by them in each WMA. The WRM functions that may be relevant are shown in the schedule hereunder. The division of functions between abstraction and waste discharge related uses will be done in accordance with the schedule hereunder. The water resource management charge for abstraction related water uses will be based on the budget for abstraction activities and integrated functions. The cost of waste discharge activities and integrated functions will be used for setting the waste discharge component of the WRM charge.

The costs of certain functions may be entirely allocated to either abstraction or waste discharge related uses as indicated, while there are other functions that are inherently integrated in nature. The costs of integrated functions need to be allocated between abstraction and waste discharge related use in a transparent manner reflecting the

management effort incurred in the WMA. Allocation of the costs of integrated functions between waste discharge and abstraction will therefore be according to the management effort (resources) being allocated to abstraction related uses versus management effort allocated to waste discharge related water uses within the WMA.

An inter-basin transfer scheme refers to infrastructure constructed to transfer water between river systems located in different WMAs, in order to augment the allocable yield of water stressed catchments. Examples are the Riversonderend – Berg River, Tugela – Vaal, Orange – Fish, Tugela – Mhlathuze and Usutu – Vaal transfer schemes, constructed by DWAF.

Water to be imported via an inter-basin transfer scheme will reduce the potential for generating funds in the donor WMA through water use charges and increase the potential in the receiver area. This loss in income in the donor WMA must be funded by water use charges raised in the receiver WMA. The receiver CMA must reimburse a fixed portion of the WRM budget of the donor CMA, based on the yield transferred calculated as a fraction of the total available yield at 98% assurance of supply, in accordance with the NWRs.

If the receiver WMA is still managed by DWAF and the donor WMA is taken over by a CMA, then DWAF needs to pay the CMA. If both the receiver and the donor WMA are still managed by DWAF, then DWAF will ring fence the transfer payment and spend this amount in the donor catchment.

Where the quality of streamflow from an upstream WMA to a downstream WMA imposes an additional water quality management cost on the downstream WMA, this additional cost needs to be funded by WRM charges on waste discharges in the upstream WMA. The upstream CMA must reimburse a fixed portion of the WRM budget of the downstream CMA (related to the additional water quality management cost), based on the discharge load in the upstream WMA as a ratio of the total discharge load in the downstream WMA.

6.2 Water resource management activities that could be taken into account for charge setting includes:

No	Function / Activities	Abstraction activities	Waste discharge activities
1	Catchments	<ul style="list-style-type: none"> Resource studies, investigations and integrated strategy development Allocation plans 	<ul style="list-style-type: none"> Water quality management plan
2	Resource directed measures	<ul style="list-style-type: none"> Reserve determination, Classification & Resource quality objectives. 	
3	Water use authorisation	<ul style="list-style-type: none"> Registration and verification of water use Abstraction & stream flow reduction activities licensing Dam safety regulations 	<ul style="list-style-type: none"> Waste discharge & marine outfall licensing
4	Control and enforcement of water use	<ul style="list-style-type: none"> Abstraction & stream flow reduction activities control & monitoring Dam safety control 	<ul style="list-style-type: none"> Waste discharge and marine outfall control & compliance monitoring

No.	Function / Activities	Abstraction activities (private dams)	Waste discharge activities
5	Disaster management	<ul style="list-style-type: none"> Flood & drought management 	<ul style="list-style-type: none"> Pollution incident planning and response (management)
6	Water resources management programmes	<ul style="list-style-type: none"> Integrated programmes Abstraction programmes Water conservation & demand management 	<ul style="list-style-type: none"> Waste discharge programmes [e.g. cleaner technology, dense settlements, waste discharge strategies]
7	Water related institutional development	<ul style="list-style-type: none"> Stakeholder participation, empowerment, institutional development & coordination of activities 	
8	Water weed control	E.g. hyacinth	
9	Terrestrial Invasive Alien Plant (IAP) (see 6.5.7)	<ul style="list-style-type: none"> Control of invasive alien plants with acknowledged negative impacts on water resources; e.g. riparian zones, mountain catchment areas, wetlands and in areas where there could be an impact on aquifers. 	
10	Geohydrology and hydrology (see 6.3.5)	<ul style="list-style-type: none"> Monitoring groundwater yields & compiling of maps and yield information Extending and maintaining the hydrological database & compilation of information Water quality monitoring & compilation of information 	
11	Administration & Overheads	Admin & overheads for regional office or CMA	

6.3 Determination of sectoral water resource management (WRM) charges per WMA for abstraction related water uses

6.3.1 Water use sectors

The user sectors for which unit sectoral water resource management charges will be calculated are:

- Domestic/industrial (water services authorities, industrial, mining, strategic)
- Agriculture (irrigation of agricultural crops)
- Stream flow reduction (commercial forestry at this stage, other sectors may be added)

6.3.2 Assurance of water availability

Water for productive use is available or is abstracted at different assurances and this must be reflected in the annual payment for water resource management services. Assurance of availability is taken into account by registering the estimated long-term average annual volumetric use of the various users. This determination must take into account the historic availability of water through rainfall, run-off and storage characteristics in respect of individual water users and the imposition of water restrictions during droughts. The estimated long term average water use will be based on water allocations qualifying as existing lawful use, scaled down to reflect assurance of availability.

6.3.3 Determination of annual sectoral use volumes per WMA for pricing purposes

The registered water use of the various sectors must reflect volumes as determined by using the following methodologies for the water uses as defined.

Section 21 (a) use

Domestic/Industrial

- Water allocations as reflected on a lawful permit, general authorisation or licence or which constitute an existing lawful use in terms of section 32 of the NWA, and amended for assurance of supply.

Agriculture

- The existing lawful water use related to irrigated agriculture or allocated for new licences, and amended for assurance of supply. The SAPWAT programme developed by the Water Research Commission or other methods as approved by the Department will be used to determine average annual volumetric use. Irrigation quotas, amended for assurance of supply, will be registered in former water control areas and on waterworks owned by water management institutions.

Section 21 (b) use

- Where in stream located storage dams are for the enhancement of the real estate value of a property and the water stored is not diverted consumptively for productive use, the initial filling, in the case of a new dam and the annual refilling, in the case of an existing or new dam, will determine the annual volume used consumptively. The registered volume subject to pricing will be based on the estimated net annual evaporation losses from the full supply surface area of the dam under average climatic and rainfall conditions to the extent that it exceeds evaporation from natural landscape. Section 21 (b) use will be classified as domestic/industrial and charged for under this sector

Section 21 (d) use

SFRA (Forestry)

- Modified tables based on the WRC Report No TT 173/02 (April 2002): Estimation of streamflow reductions resulting from commercial afforestation in South Africa [MB Gush, DF Scott, GPW Jewitt, RE Schulze, TG Lumsden, LA Hallows and AMM Gorgens] or other methods as approved by DWAF will be used to determine average annual use of existing lawful plantations and for new licences.

The total volume of registered water use per WMA as captured by WARMS must be compared with the total yield of current resources at 98% assurance within the WMA, which can be allocated for productive purposes, in terms of the NWRS or the most recent determination. This allocable volume must exclude the quantities set aside for the Reserve, international obligations and for existing transfer to other WMAs.

Where water in a WMA is fully utilised or over-allocated (registered use exceeds allocable yield) the total volume of registered sectoral water uses will determine charges. In an under utilised WMA the volume of allocable water will determine volumetric charges. The estimated allocable sectoral use volumes will then be determined by applying the ratio of volumes registered by each sector to the allocable yield.

6.3.4 Cost Allocations to Sectors

Abstraction related water resource management activity costs must be allocated to sectors in proportion to volumetric mean annual sectoral use as registered, which reflects assurance of supply. Cost allocation will thus take assurance of supply into account, and differentiate between activities. Certain activities will only benefit some sectors and therefore will not be allocated to all user sectors. Cost allocations for abstraction related uses will be determined as follows:-

- **Domestic/Industrial** - This sector will attract all abstraction related activity costs pro rata to its share of total productive use in the water management area. The basic human needs requirement (see Section 4) will be subsidised through the equitable share grants.
- **Agriculture** - This sector will attract all abstraction related activity costs pro rata to productive use.
- **Stream flow reduction activities** - Afforestation will attract all abstraction related activity costs, pro rata to productive use, except for dam safety control.

The activity input cost regarding an inter WMA transfer will be allocated only to those sectors that benefit directly from the transfer through water allocations in the receiver WMA.

6.3.5 Geohydrology and Hydrology

The main charge under the above mentioned water resource management activity is for monitoring and is broken down into:-

- **Operational Purpose** - This type of monitoring is necessary for efficient water resources management and for water use billing.
- **National Network** - The national network is designed to effectively monitor the country's water resources for national water resource planning purposes. The construction cost of gauging stations and of associated water quantity and quality monitoring comprise national functions and is borne by the fiscus. DWAF head office and regional offices currently make the largest financial contribution towards identifying the need for new monitoring and continuation of monitoring at existing gauging points. Data and information gained at existing and new sites may be of direct benefit to a specific scheme or water management area. In these cases it is reasonable to charge a specific WMA or water scheme a reasonable portion for this type of monitoring.

- **Compliance Monitoring** – Reserve determinations are being made and will be made in future. It is necessary to monitor the availability of the reserve on an ongoing basis. The existing network will be utilised for the purpose of reserve monitoring. Where this is not possible, and new monitoring points are needed, the beneficiary WMA or scheme will fund this function since it is part of effective water resources management. This will be reflected in either water resource management charges or operations and maintenance charges under Section 7.1.1.

It should be noted that the need for monitoring, as captured in the priority list for new gauging stations, stems from wide consultation which identified these requirements for purposes of planning, operation, resource quality management, surface and groundwater monitoring, flood and drought management. Charges for the above will only be applied to users if the monitoring is specific to a particular water management area or a specific water scheme.

6.3.6 Water resource management charges

Sectoral water resource management charges for each WMA will be calculated as follows:

- Total budget cost of each activity will be divided by the registered volumes to arrive at a unit charge per activity.
- In WMAs where the allocable yield (water available for use) is more than the registered volumes, a discount will apply, which will be determined by using the allocable yield to determine the unit charge instead of the registered volumes.
- The budgeted activity cost will be applied only to those sectors attracting such cost (e.g. the forestry sector will be excluded from charges relating to dam safety inspection).
- The unit charge for all relevant WRM activities will then be applied to each user's registered volumes to arrive at a WRM charge per user.

Unless other arrangements are approved by the DWAF/CMA the charges will result in a fixed payment, 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. Maximum (capping) values could be determined on the basis of historical, socio-economic and other considerations and may be supported by State subsidies. Minimum cut-off values for annual payment can be laid down by CMAs where the cost of collection would exceed income. Reimbursements of inter WMA transfer payments will be done on a monthly basis in equal instalments.

It must be noted that if water use charges are too low they may lead to non-viable institutions, sub-optimal water resources services and overall deterioration of the water resources. There is therefore a need to adjust to higher real charges over time to accommodate the cost of effective and financially sustainable water management institutions, taking cognisance of affordability constraints within user sectors.

6.4 Determination of sectoral water resource management (WRM) charges per WMA for waste discharge related water use

6.4.1 Water use sectors

The sectors for which waste discharge related water resource management charges will be calculated are similar to the sectors for the abstraction related charges, namely municipal (domestic), industrial, mining, energy and agriculture (excluding streamflow reduction activities). However, in calculating this charge, a distinction must be made between:

- Point source discharges directly to surface water resources
- Discharge to land based facilities (with potential non-point source impacts), such as irrigated effluent, tailings dams and evaporation ponds
- Point source discharges to the marine environment (marine outfalls)

6.4.2 Determination of annual waste loads per WMA for pricing purposes

Waste is defined in terms of Section 1 (1) (xxiii) of the NWA. The calculation of charges will be based on the registered discharge waste load of salt and phosphorus, as representing the two most widespread water quality problems in South Africa, based on the following:

- Salt load will be estimated using electrical conductivity.
- Phosphorus (as the limiting nutrient for freshwater eutrophication) will be estimated using soluble phosphorus (phosphate).

The following methodology will be used to calculate waste loads for the following categories of waste discharge related water uses as defined:

Section 21 (f) use - Discharged salt and phosphorus waste loads calculated as the average (mean) discharge concentration times the discharge volume as reflected on a lawful permit or licence, general authorisation and/or verified as existing lawful use.

Section 21 (g) use - Disposed salt and phosphorus waste loads calculated as the average (mean) concentration times the volume of water as reflected on a lawful permit or licence and/or verified as existing lawful use.

Section 21 (h) use
Marine outfall - Disposed phosphorus waste loads calculated as the average (mean) concentration times the volume of water as reflected on a lawful permit or licence and/or verified as existing lawful use.

Other - Disposed salt and phosphorus waste loads calculated as the average (mean) concentration times the volume of water as reflected on a lawful permit or licence and/or verified as existing lawful use.

Section 21 (e) use
Irrigation of land
With waste [S37(1)a] - Irrigated salt and phosphorus loads calculated as the average concentration times the volume of irrigated water as reflected on a lawful permit or licence and/or verified as existing lawful use.

Controlled waste
Disposal [S38(1)] - Irrigated salt and phosphorus loads calculated as the average (mean) concentration times the volume of disposed water as

reflected on a lawful permit or licence and/or verified as existing lawful use.

The point source salt and phosphorus waste loads in a WMA will be calculated from the registered discharge load in terms of Section 21(f). This will be distinguished from the total phosphorus waste load through marine outfalls [under S21(f)] and the total salt and phosphorus waste loads disposed to facilities [S21(g)] or land [S21(e)]

6.4.3 Cost allocations to sectors

The budgeted water resources management activity costs allocated to waste discharge related water use will be allocated to the water use categories according to the ratio of management effort applied in the WMA. Certain activities will only benefit or be related to specific water use categories and therefore will only be allocated to those categories. No differentiation will be made between sectors within a water use category. Cost allocations will be based on:-

- **Point source discharges** - Management effort for point dischargers, attracting all waste discharge related activity costs.
- **Marine outfalls** - Management effort for marine outfalls, attracting waste discharge activity costs except water resources monitoring, resource directed measures and waterweed control.
- **Waste disposal to facilities / land** - Management effort for waste disposal to land, attracting all waste discharge related activity costs.
- **Irrigation of land with water containing waste** - Management effort for irrigated effluent, attracting all waste discharge related activity costs.

The additional water quality management cost related to discharge load into a downstream WMA will be allocated to the waste discharge water use categories, except marine outfalls, based on the same management effort ratios.

6.4.4 Water resource management charges (Waste Discharge)

Waste discharge related water resource management charges for each water use category in each water management area will be determined by dividing the total cost allocated to each category by the total registered waste load of salt and/or phosphate for the water use category. The cost allocation to be recovered through charges on salinity and/or phosphorus loads will be based on the relative management effort associated with these two water quality problems within the WMA. In some WMA, this implies only salinity or phosphorus discharge loads would be used to collect charges, while in other WMA the salinity and phosphorus loads would be weighted.

The charges will result in a fixed payment, which will be invoiced on a monthly or six monthly basis, according to the abstraction related invoicing cycle.

6.4.5 Implementation of the charge

The WRM charge for waste discharge will be implemented after the requirements for registration of licenses, general authorisation and confirmation of existing lawful waste discharge is completed.

6.5 Other funding arrangements and limitations

6.5.1 SFRA (Forestry) Cap

WRM charges to the forestry sector are capped at R10 per hectare plus Producer Price Index (PPI) rate (%) at April of each year with 2002-03 financial year as the base year. Resource poor foresters and non-irrigation growers with land equal to or less than ten hectares under cultivation will be excluded from this charge.

6.5.2 Irrigation Cap

Water Resource Management charges to the irrigation sector are capped at 1.5 cent per m³ plus the PPI rate (%) at April of each year with 2007-08 as base year. In instances where the actual 2006/07 charges to the agricultural sector as calculated under the 1999 Pricing Strategy would have been higher than the capped amount of 1.5 cent per m³ (because of the impact of PPI resulting in charges above 1.5 cent in previous years), then the higher actual charge will be used as the base charge for charge setting purposes.

6.5.3 Phasing in of WRM charges

WRM charges for resource poor farmers and resource poor forest growers will be phased in over five years through fiscal subsidy of amounts not recovered from the beneficiaries.

A differentiated subsidy policy will be applied to determine annual costs to be recovered from resource poor farmers and forest growers. A table providing details of the subsidy is provided in section 10.1. The subsidy comes into effect on the date of registration of water use by individual resource poor farmers or resource poor forest growers.

6.5.4 WRM functions undertaken by Water Boards, CMAs and WUAs on behalf of DWAF

In instances where Water Boards, CMAs, WUAs or local government perform water management functions on behalf of DWAF, an appropriate agency and compensation agreement will be drawn up between DWAF and the relevant Water Board, CMA, WUA or local government.

6.5.5 CMA as a DWAF agent for National Function

A CMA may be contracted as a special project / programme (or even delegated) by DWAF to perform certain national functions, which DWAF would exclusively fund through parliamentary appropriation. A service or management fee will be payable by DWAF to the CMA as a condition of this contract or delegation. Functions that may be dealt with in this manner may include:

- National water resource monitoring (if this is not done by another institution)
- DWAF water resource management programmes or projects, where the CMA acts as an implementing agent on behalf of DWAF, possibly including compulsory licensing and classification.
- National developmental and/or empowerment programmes and projects where the CMA acts as an implementing agent for DWAF.

6.5.6 Other possible CMA sources of Income

In addition to water use charges and possible financial support from parliamentary appropriation, there are a range of other lawful income sources that the CMA may consider.

- Recreational concessions – Once the concession process for recreational water use to be covered by the future pricing strategy document mentioned in Section 5, has been established, the CMA may become responsible for implementing, administering or overseeing some of these concessions.
- Licence application fees – The CMA should receive a major portion of the license application fee as soon as it is, performing licensing functions, and ultimately should receive the entire fee once it is the responsible authority.
- Donor support and sponsorship – A CMA may fund its activities through any lawful source in addition to water user charges and parliamentary appropriations, which may include donor support or sponsorship. However, transparency must be maintained, as actual or perceived conflict of interest must be avoided. This should include constraints over the types of functions that may be supported, particularly from bodies with a vested interest in the WMA. All sponsorship and donor contributions in excess of R2000 must get prior approval from the Minister of Water Affairs and Forestry.
- Contractual payments – The CMA may perform ancillary functions outside of its WMA, as well as non-water resource management activities that are related (incidental) to its functions or mandate, as long as this does not jeopardise its functions or detrimentally affect another water management institution.
- In-kind contributions – Although in-kind contributions are not explicitly income, they would reduce the expenditure and required income of the CMA. They are most relevant for institutional development and stakeholder participation related functions, but may include other bodies involved in monitoring and other water resource management activities coordinated by the CMA. All in kind contributions in excess of require prior approval from the Minister of Water Affairs and Forestry.

The Minister could from time to time review and amend the value of the minimum in-kind contribution, done as well as requiring prior approval by way of a written

6.5.7 Invasive Alien Plants (IAP's)

The full cost of control of certain IAP's may be charged to affected water users. In this regard the Regional Office or future CMA, in consultation with affected stakeholders, will recommend that the control of IAPs in a particular catchment is necessary for water security and, from the range of options available, the control of IAPs is the best and most cost effective action possible to increase long term water security and availability. Once agreement is reached on the method of control IAPs, and before going ahead with clearing, the total cost of control must be communicated to all affected stakeholder organisations. These costs may be supported by subsidy where available and appropriate.

The agreed upon cost of control will then be allocated to all water user sectors in proportion to their registered abstraction related water use.

In the event of consensus not being reached amongst water user sectors, Regional Offices or CMAs will go ahead with clearing in co-operation with those sectors that have agreed to

participate in the clearing process. The resultant additional water after taking the ecological reserve and reducing over allocation into account may be allocated to sectors that financially participated in the clearing project.

7. FUNDING OF WATER RESOURCE DEVELOPMENT AND USE OF WATERWORKS

Water resource development and use of waterworks refer to the planning, design, construction, operation, maintenance, refurbishment and betterment (improvement) of Government water schemes and schemes to be funded by water management institutions like the TCTA and WUAs. If water use charges are too low, they will lead to underinvestment, over-consumption and unwarranted fiscal subsidies. There is therefore a need to adjust to higher real tariffs over time to accommodate the cost of investing in supply capacity to meet rising demand and to refurbish existing infrastructure.

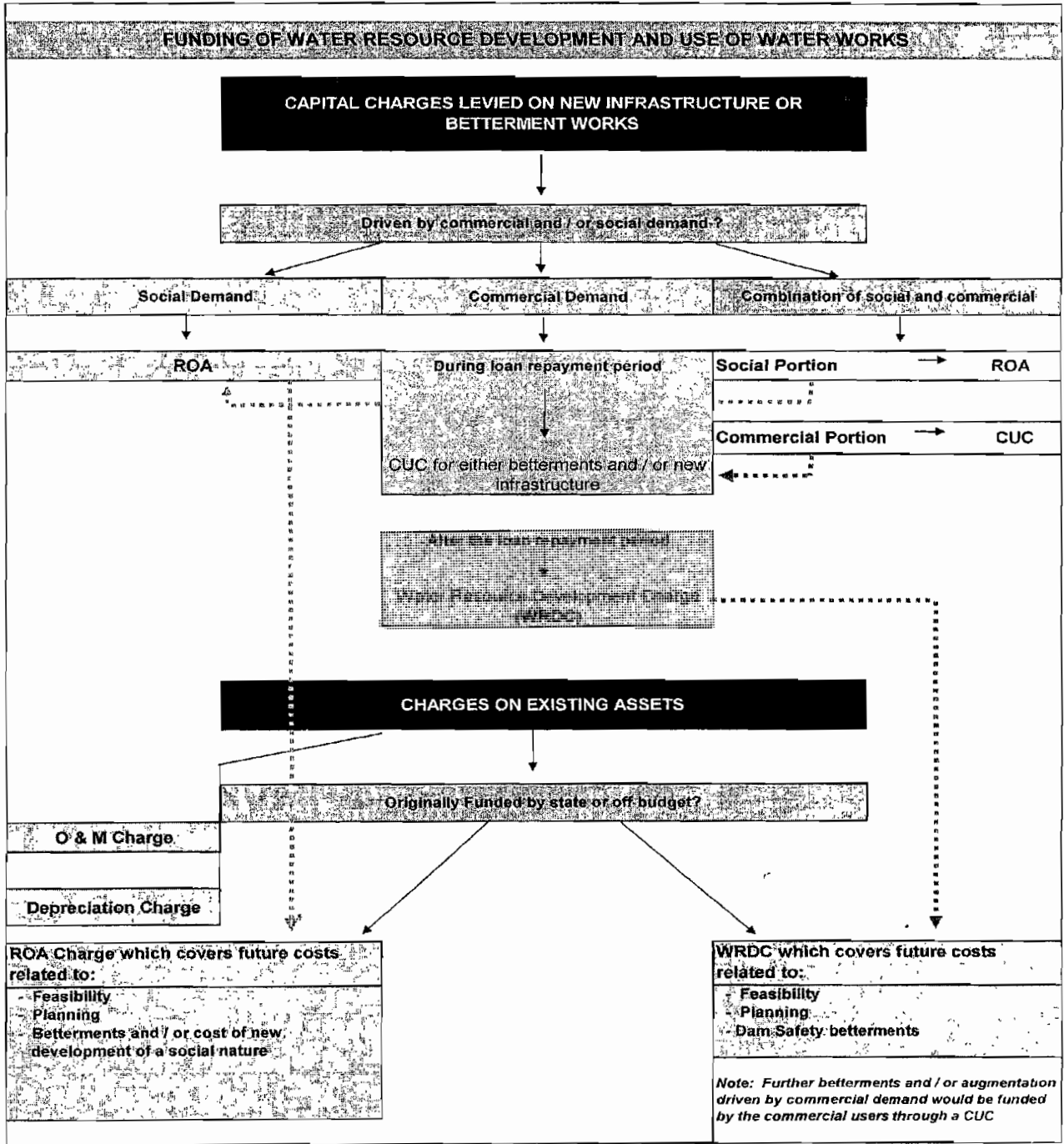
7.1 Government Waterworks

In terms of section 56 (2)(b) of the National Water Act, 1998, water resource development costs could include the related costs of investigation, planning design and construction of water schemes, which constitute the capital cost of projects. This revised pricing strategy utilises the depreciation, return on assets (ROA) and off-budget funding approach for setting charges to fund the capital cost in respect of development, refurbishment and betterment of schemes owned by Government. In recent times, given the budgetary constraints from National Treasury on large-scale water resource infrastructure development, the mechanism of off budget funding of commercially viable new water infrastructure by Funding and Implementing agents such as TCTA, has become accepted practice. The funding of these infrastructure developments requires loans, which naturally have certain repayment periods associated with them during which bulk water users must pay charges as per contractual agreement. State funding will in the future be confined mostly to social water resource development or betterment projects, which conform to the purpose, set out in section 2 of the NWA, 1998 and where the demand is not driven by specific commercial water users or sectors. Capital expenditure related to the promoting of equitable access to water, meeting current and future international obligations and dam safety betterments on State owned dams will qualify for State funding. New infrastructure development or betterment may have a social as well as a commercial component in which case State funding and related charges will apply on the social component, while loan funding and related charges will apply on the commercial component.

There may be instances when the state will develop water infrastructure in the expectation of promoting economic development. In these instances social users will be charged in terms of the policy for on-budget governmental funding, while a rate equivalent for off-budget funding will be negotiated with economic users. The classification of a project (social or commercial) will be at the sole discretion of the Minister of Water Affairs and Forestry.

The tables below show the charges that may apply for infrastructure funded under different circumstances.

CHARGES TO BE LEVIED	EXISTING SCHEMES	NEW PROJECTS		
	Historically funded by Exchequer or where off-budget debt has been repaid	Fully or partially funded by Government	Initially funded by Government and recouped from end users	Off-budget funding applied fully or partially
Operation and Maintenance	✓ (see 7.1.1)	✓ (see 7.1.1)	✓ (see 7.1.1)	✓ (see 7.1.1)
Depreciation	✓ (see 7.1.2)	✓ (see 7.1.2)	X	X
Refurbishment	X	X	✓ (see 7.1.2)	✓ (see 7.1.2)
Return on Assets	✓ (see 7.1.3)	✓ (see 7.1.3)	X	X
Water Resource Development	✓ (see 7.1.3)	X	X	X
Betterment	X (see 7.1.5)	x (see 7.1.5)	✓ (see 7.1.5)	✓ (see 7.1.5)
Capital Unit Charge	X	X	✓ (see 7.1.4)	✓ (see 7.1.4)



7.1.1 Operations and Maintenance

The operation and maintenance charge shall consist of the following:-

a) Direct costs:

Fixed and variable costs, which can be attributed directly to administrating, operating and maintaining schemes and include:

- Administrative costs
- Operating and maintenance costs (e.g. pumping cost, water weed control etc.)
- Distribution cost

Direct costs will be allocated directly to sectors where this is possible. The cost of joint works and operations will be shared on a volumetric basis.

b) Indirect cost:

These are the costs which cannot be directly attributed to a specific scheme, but which contribute towards the management of the water schemes of the entire area, and comprise of:

- Allocated regional office/utility cost
- Allocated area office cost

Indirect cost that has been allocated to the schemes will be further allocated to the different sectors in an equitable time-based manner.

Operation and Maintenance charges shall be recovered on a scheme or system basis. These charges (which include direct and indirect costs) can be recovered either on an actual cost recovery basis or through an Operations and Maintenance Tariff that is based on the forecast of annual O&M costs and of water use.

7.1.2 Depreciation/Refurbishment

Depreciation is defined as the loss in functional performance and real term value of existing water resource infrastructure that occurs due to wear and tear, decay, inadequacy and obsolescence, not restored by current maintenance. This standard performance and capital value can only be restored through refurbishment. Examples are the replacement of pumps, sluice gates on dams, the concrete lining of a canal or a portion of a pipeline.

For charge calculation purposes, depreciation is the systematic allocation of a depreciable amount of an asset over its useful life and will be applied as follows:-

- On a straight-line basis over the useful life of the assets.
- The depreciation amount = annual depreciable portion of the replacement value of assets.
- Replacement value = revaluation of the value of the assets as determined in March 2000 (full technical revaluation will be carried out at least every 10 years). In intervening years, desktop revaluation will be carried out annually which means that the PPI of April of each year will be applied to escalate the base value of the infrastructure assets, and thus the annual depreciation amounts, to nominal values.

Schemes are in various stages of depreciation and need refurbishment at different points in time. It is intended that through cost recovery, depreciation charges will be used to refurbish existing assets on a prioritised basis, as and when required. Depreciation income from the general revenue base will be used for the refurbishment of infrastructure assets from a dedicated refurbishment fund.

As refurbishment will only restore the original capital value of assets in real terms, no increases in charges will take place as a result of refurbishment. On schemes funded off budget, the depreciation charge will only be applicable once the loans have been repaid. If refurbishment is required during the repayment period, a refurbishment charge will be arranged by agreement between the parties.

The depreciable portion and useful life over which the asset will be depreciated are in accordance with the table below, which is subject to revision when the next engineering revaluation of assets is due.

Component	Depreciable Portion (%)	Estimated Total Useful Life (years)
Dams & Weirs	10	45
Canals	40	45
Tunnels	10	45
Pump Stations	40	30
Syphons & Concrete pipelines	30	45
Steel pipelines	75	30
Buildings	100	40

Calculation formula for annual depreciation cost (ADC):

$$\text{ADC} = \text{Replacement value} * \text{Depreciable portion\%/expected useful life}$$

The depreciation charge is applicable to all sectors supplied from Government waterworks.

7.1.3 Return on Assets (ROA)

This component of the charge reflects payment towards the development and betterment capital value of waterworks on government water schemes. It will be determined by fixing a charge to earn a specific rate of return on the current depreciated replacement value of the infrastructure.

ROA is based on the social opportunity cost of capital to government and this should approach a level sufficient to fund the annual capital expenditure budget requirement for the development of new social waterworks and betterment of existing infrastructure.

In view of the off-budget funding arrangement for certain projects, the target level of income to be generated through ROA charges is directed towards recovering the annual capital cost requirement for State funded social projects.

An investigation of possible new social projects envisaged in terms of the National Water Resources Strategy and the capital required to fund dam safety betterments, revealed that the ROA rate of 4% laid down in terms of the 1999 Pricing Strategy and which was based on the estimated growth rate for industrial and domestic demands at the time, can

not be adjusted downward without seriously affecting the duration of the implementation programme. To cater for the estimated medium term demand for capital to be funded from the general revenue base, ROA will thus continue to be determined on a scheme or system related basis by applying a 4% rate to the State funded completion cost of new infrastructure or the depreciated replacement cost of existing infrastructure. The replacement and depreciation values will be based on engineering valuations, which were initially completed in March 2000, to be repeated within maximum intervals of 10 years. Between engineering valuations, the previous year's asset values will be inflated by the PPI of April each year to determine the nominal values of capital costs for pricing purposes. This is done to cater for the declining value of ROA over time in real terms due to depreciation and also to ensure that the value of assets over time will more closely reflect the actual replacement value when a technical revaluation is done.

The ROA charge is applicable on State funded and owned assets for as long as they exist in an operable condition. On off budget schemes, the ROA charge will not be imposed during the repayment periods of the loan to prevent too high a charge to water users.

While the National Water Act allows for a return on assets, it is intended that the ROA revenue will be applied to future development and betterment of capital projects on government water schemes. Given that the ROA charge is not applicable on off budget schemes while the loan is being repaid, there is likely to be a lack of funding available for the future development and betterment of off budget funded schemes. As stated in section 7.1.8 dealing with the treatment of reserve funds, ring fenced ROA revenue will be applied on a prioritised basis for meeting the cost of planning and feasibility of future augmentation or betterment of existing GWS and the development of social projects. The users licensed and charged for supplies from off budget schemes would thus also benefit in future from a ring fenced provision account for ROA. It will therefore be reasonable that these users also contribute towards the provision account through user charges.

In terms of Section 56 (2) (b) of the NWA, DWAF will be within its rights to raise funding from water users for water resource development and use of waterworks, including-

- (i) the cost of investigation and planning;
- (ii) the costs of design and construction; and
- (iii) the pre-financing of development

of new water infrastructure and in terms of section 56 (2) (c) to set charges for achieving the equitable and efficient allocation of water, which would reflect the scarcity value of water.

These elements will form a **Water Resource Development Charge (WRDC)** to be charged on off-budget schemes once the loan on such schemes has been repaid. Similar to State funded schemes the charge will be determined by earning a specific rate of return on DWAF's asset value for price-setting purposes of any fully paid up off-budget scheme and will be applicable for as long as such scheme is in operable use and/or the relevant water users are licensed. The asset value will be based on engineering valuation at the time that the loan has been repaid.

Cognisance will be taken of the fact that certain users have paid off loans associated to these schemes. For licensed water users who were subjected to off budget funding, the charge rate for this WRDC will be determined by the Minister of Water Affairs and

Forestry at the time when it becomes applicable (after loans are paid off) and will be applicable for all similar schemes. As a principle this rate will be less than the ROA rate on State funded schemes. For other water users licensed after the off budget debt has been repaid, the full ROA charge will be applicable.

The ROA charge is applicable to the following sectors supplied from government waterworks:

- Local Government (domestic)
- Industry
- Mining
- Strategic (Energy)
- Agriculture – only for new schemes

For the Agricultural sector, ROA charges as per the 1999 Pricing Strategy would not be applied to existing State irrigation schemes. These charges will also not be applicable to resource-poor farmers for existing schemes and new schemes constructed as part of the Water Allocation Reform programme. ROA will however be applicable for new government schemes constructed for established commercial farmers.

7.1.4 Government schemes funded off budget

Water management institutions such as the TCTA, which are directed by the Minister of Water Affairs and Forestry to implement and fund government water schemes off-budget, are entitled by the NWA to raise loans to finance the development of new water resource infrastructure, and should therefore be able to service these loans through cost recovery. The TCTA will be incorporated in the National Water Resource Infrastructure Agency (NWRIA), which will in due course take responsibility for developing and operating South Africa's national water resource infrastructure. The NWRIA has been approved by Cabinet and will be established through its own Act in Parliament. The TCTA or future NWRIA in consultation with stakeholders will on a project-by-project basis determine the extent of charges as determined by the proposed financial modelling. The primary charge will be the Capital Unit Charge (CUC).

In the interim before establishment of the NWRIA, the TCTA may enter into an implementation agreement with the Department of Water Affairs and Forestry ("DWAF") and DWAF may thereafter enter into a water supply agreement with the end-users. Consequently these agreements will be "back-to back" and serve the purpose of recording the rights and obligations of the parties in the implementation, financing and supply of water pertaining to the new government water work. In these instances, the TCTA will levy the CUC onto DWAF and DWAF will in turn levy the CUC onto the end-users. A cession may be signed between the parties whereby the CUC charge is paid directly to the water management institution.

In this scenario, when the project debt has been repaid, the project will attract all charges that are applicable to State funded schemes except for the ROA charges which will be replaced by the WRDC as explained above.

Guidelines for the CUC

- A tariff is determined which will ensure that the debt on the project will be fully paid by the end user within a reasonable period of time. A reasonable period is usually determined as being between 18 to 25 years, taking cognisance of both end user affordability and future augmentation of a scheme.
- The reasonable period of time to repay the debt, which shall not be longer than the economic life of the asset, will be determined on the basis of:
 - The debt profile and acceptable growth and level of debt of the project;
 - Not allowing the debt of a project to overlap to an unreasonable extent with another project causing financial strain to end users or unhealthy financial balance in the water sector; and
 - The anticipated future funding requirements of the augmentation of the project.
- A tariff is calculated such that it is constant in real terms and grows with inflation, being CPIX, unless otherwise agreed to between the parties or any of the review triggers being applicable.
- A tariff may be phased-in during the construction period.
- Parties should endeavour not to capitalize interest after completion of construction. The terms by which interest will be capitalized will be included in the terms of the original binding contract, or alternatively a supplementary agreement, agreed to by all signatories to the original contract.
- The tariff will be based on water used from a scheme or system and not necessarily water provided into a scheme or system, which will enable water demand management, water restrictions etc.
- Phasing-in and step down of the tariff can be allowed for if it still facilitates end user affordability, provision for future augmentation will also be considered.
- Demand projections are used to determine a tariff which is reviewed annually taking account of changes in:
 - Water demand projections;
 - Real interest rate projections;
 - Inflation projections and/or
 - Cost of the scheme as well as cost and timing of future augmentation.
- From date of invoice amounts are payable to the water management institution within 30 days, unless otherwise agreed to between parties.

Review triggers of the CUC

The CUC charge may contractually be subject to an annual review where increases are passed through automatically or under specific conditions negotiated between the parties. These conditions shall take into account but not be limited to the following factors:

- Changes in the yield of the system;
- Changes in macro economic projections;
- Changes in legislative charges;
- Changes in construction costs;
- Any revenue generated by the scheme other than the CUC and as agreed to by the parties to decrease the amount outstanding to repay the scheme;
- Changes in water use allocations and compulsory licensing; and
- The timing and cost of future schemes.

7.1.5 Betterments

Betterment implies an improvement of existing water resource infrastructure resulting in an increased functional performance and/or real term capital value thereof. Examples are the raising of an existing dam to increase the yield, the enlargement of a canal to increase capacity and improving the stability of dams for safety purposes.

Betterment of social projects will be funded through the ROA provision. After betterment is introduced, the real value of the asset will increase, resulting in an increased ROA amount for charge setting purposes.

For betterment of commercial driven projects using off-budget funding, the Minister of Water Affairs and Forestry or the water management institution may levy a betterment charge in consultation with the end-users post construction of the new water infrastructure. The charge may, at the discretion of the end-user, either be determined on an actual costs recovery basis or determined taking into consideration the need to smooth over time the impact of the charge if high capital costs have to be incurred to increase the availability of water or to maintain the assurance of supply.

The same principles of the CUC will apply in collecting revenue from the charge.

7.1.6 Methodology in determining unit cost

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

The capital cost of multipurpose dams will be divided between sectors in proportion to the long-term estimated average annual sector use of allocations. Average sectoral use will reflect curtailment during water restrictions, thus taking into account the assurance of supply. The ROA and depreciation charges per sector will then be determined by using the divided capital cost allocations.

Unless scheme-specific assurance of supply is available, the long-term average annual use of the various user sectors will be considered to be the following percentage of allocations on government water schemes:

Sector	% of Sectoral allocation	Calculation of sectoral allocation %
Irrigation sector	91%	(100%@70%+70%@30% of the time)
Domestic, industrial and mining	97%	(100%@70%+90%@30% of the time)
Strategic industrial sector	100%	No water restrictions

- 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.
- Percentages may be applied to determine the price differential on the CUC charges based on the Assurance of Supply.

The assurance of supply is applied as follows:-

- If for example a scheme has 100 million m³ of available water per annum:
- If 30% is allocated to domestic and industry, (30 million m³) and the balance of 70% is allocated to agriculture, then the long term average use of allocations will be calculated as follows:-

Domestic & Industry	30 million m ³ × 0,97	29,1 million m ³
Irrigation	70 million m ³ × 0,91	<u>63,7 million m³</u>
Total		<u>92,8 million m³</u>
Domestic and Industry allocation of cost will be	29,1 / 92,8	31.36%
Irrigation allocation of cost will be	63,7 / 92,8	<u>68,64%</u>
Total cost allocation		<u>100 %</u>

Under the current example, Domestic and Industry will pay a premium of 1.36% as a result of a greater assurance of supply while Irrigation will receive a discount of 1.36% as a result of a smaller assurance of supply.

7.1.6.2 Consumptive charges on social projects

A unit cost will represent the consumptive charges to be levied on existing and new social (Government funded) water schemes. Unit costs will be determined based on the annual sectoral cost allocations in respect of ROA (where applicable), Depreciation and Operation and Maintenance.

Unit costs will be based on the estimated water use but consumptive charges will be invoiced on actual measured or registered use.

On social projects where the long-term yield of the dams has not been fully allocated, consumptive charges will be based on the long-term yield, which implies a State subsidy.

On canal or pipeline scheme elements of social projects which are under utilised because full utilisation as planned could not materialise, the capacity of the canal/pipeline should be used as a basis for calculating charges.

Unless other arrangements are approved by DWAF, consumptive charges will be invoiced on a monthly basis for the domestic/industrial sector and bi-annually for the agricultural sector.

In order to promote water conservation and demand management, consumptive charges can consist of fixed and variable payments where agreements are concluded with user bodies.

7.1.7 Phasing in of consumptive charges

- Domestic/Industrial/Mining/Energy sector

Annual increases for existing state funded schemes will be limited to 10%+ PPI (rate taken in April) until full cost recovery is reached. During the phasing in period, charges will not be reduced below the previous year's level, except in extraordinary circumstances, which would make a reduction inevitable.

- Agricultural sector

• Established farmers

- (a) Full Operation and Maintenance costs will be recovered annually, with an annual increase limited to 50%.
- (b) Depreciation charges for existing schemes will be capped at 1.5 cents per meter³ plus PPI (rate) with 2007/08 as base year, with annual increase limited to 20% of the previous years charge.
- (c) Full financial cost recovery (including ROA) for new schemes.

• Resource poor farmers

- (a) Operation and maintenance charges will be phased in over five years from date of registration of the relevant water use.
- (b) Depreciation charges will be waived for five years from the date of registration of water use. Thereafter charges will be capped at 1.5 cent per meter³ plus PPI (rate) with 2007/08 as base year, increases will be limited to 20% of the previous years charge.
- (c) Capital cost for new development will be subsidised by the fiscus.
- (d) Further waiving of charges will be considered for a limited time period on request by other relevant Departments, for example, where land and agricultural reform programmes are involved.

- WUAs as Billing Agents

As WUAs capacity develops, they may be used as billing agent for water charges. The timing of the transfer of responsibilities will be subject to an assessment by the Department of Water Affairs and Forestry.

7.1.8 Treatment of Reserve Funds

The depreciation, return on assets and water resource development charges (WRDC) will result in reserve funds theoretically being managed by DWAF / NWRIA over time.

DWAF / NWRIA will only be in a position to finance capital cost requirements for refurbishment on specific schemes from its general depreciation charge revenue base and to finance the development of new social projects and betterment of existing projects from the general ROA and WRDC revenue base once a dedicated reserve fund has been put in place, from which capital expenditure can be made in a controlled manner.

When the above structures have been put in place the depreciation charge revenue may serve as a stabilization reserve for refurbishment whilst the ROA and WRDC income may serve as a provisioning reserve for betterment and development of social projects and could also be applied to dam safety betterments on existing schemes.

Use of depreciation funds will be prioritised in accordance with DWAF/NWRIA integrated water resource risk management systems.

As stated above, once a ring fenced provision account for ROA and WRDC has been established, this revenue will be applied to the funding of water resource development, prioritised as follows:

- (i) Planning and feasibility of future augmentation, (social or commercial projects),
- (ii) Betterment and/or development of social projects.
- (iii) Dam safety betterments on existing schemes (social or commercial).

Further cost such as those required for international obligations will be funded from the exchequer.

Prior to developing new water infrastructure projects, DWAF will assess the viability of undertaking a water conservation and demand management project as a cost effective alternative to developing new water infrastructure projects.

7.1.9 Water Supply Agreements

DWAF/NWRIA shall enter into water supply agreements with major bulk raw water users and also with water boards, which have to enter into long-term water supply agreements with municipalities.

7.2 Schemes Owned by CMA's and WUA's

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 the following:

- (a) recovery of overheads/management, 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 for refurbishment;
- (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 relevant constitution, or if directed so by the Minister to give effect to the provisions regarding the rendering of financial assistance in terms of the NWA.

8. ECONOMIC CHARGES (S56 (2) (c))

The economic charge will support the objective of economic efficiency as covered under chapter 3 in providing an incentive to shift water use from low to high values. The economic charge can be set only by DWAF, on a scheme or system related basis and the revenue would accrue to Treasury.

There are two methods of setting the charge, i.e.:-

- administratively by determining a proxy for the economic value of water, or
- via market-orientated mechanisms.

- **Administrative mechanisms**

The administratively determined charge can be used in water stressed catchments to provide an incentive for existing users to increase economic efficiency. The administratively determined charge will be based on the opportunity cost of water as determined by prevailing trading transactions but will be capped to the level of the return on assets charge for the relevant scheme or system. This implies that only water users not charged for ROA or CUC may be subjected to this charge.

Since the pricing strategy introduced financial charges will go a long way towards improving the efficient allocation of water, the administratively set economic charge will not be introduced before compulsory licensing is implemented, and then only after consulting the relevant stakeholders and water management institutions. This annual charge will be an add on to any charges levied for water resource management, depreciation and use of waterworks.

- **Market-orientated mechanisms**

Where amounts of water are still available for allocation after compulsory licenses have been issued, and there is competition for using this water, the public auction procedure may be followed. The price established in this manner will be based on market clearance principles by allowing applicants to take up the entire available supply through a bidding or tendering process. Before introducing this process, a regulation must be developed in accordance with section 26(1)(n) of the NWA.

Another market-orientated mechanism, which is already in place, is the transfer of water use entitlements via trading transactions in terms of Section 25(2) of the NWA. A procedural guideline has been developed to facilitate trading within and between water use sectors. This may obviate the need of setting economic charges administratively in water-stressed catchments.

9. THE WASTE DISCHARGE CHARGE SYSTEM

During the consultation process of the pricing strategy document, stakeholders had an opportunity to fully comment on sections of the Pricing Strategy dealing with the Waste Discharge Charge System (WDCS), which included chapters on:

- The Basis for the Waste Discharge Charge System, the
- Incentive Charge, and the
- Mitigation Charge

The WDCS will be included as an extension to this pricing strategy only once certain Amendments to the NWA are approved by Parliament.

Once the amendment to the Act is approved, no further formal consultation of the WDCS will take place as the process of consultation took place when this strategy was Gazetted for public comment on 1 July 2005 under Notice 1045 of 2005, Gazette No. 27732.

10. 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)).

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 Service 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 not 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 litres per capita per day) free of charge to water services authorities, but through Equity Share Grants made in terms of the annually enacted Division of Revenue Act.

10.1 Impact of Raw Water Pricing Strategy on Different User Sectors

SECTOR	RESOURCE MANAGEMENT CHARGES	RESOURCE DEVELOPMENT CHARGES	PHASING IN OF CHARGES
Domestic/Industrial	<ul style="list-style-type: none"> • Full cost recovery on abstraction and waste discharge related use 	<ul style="list-style-type: none"> • On-budget GWS: Depreciation; ROA: O&M • Off-budget GWS: CUC, Refurbishment, WRD and O&M • WMI's: Full cost 	<ul style="list-style-type: none"> • WRM charges introduced fully after registration of water use in WMA • Waste discharge related WRM charges to be implemented after registration of waste

SECTOR	RESOURCE MANAGEMENT CHARGES	RESOURCE DEVELOPMENT CHARGES	PHASING IN OF CHARGES
		recovery	users. <ul style="list-style-type: none"> Annual increase on development charge will be limited to PPI + 10% until target development charge is achieved on state funded GWS.
Stream Flow Reduction Activities <u>Commercial growers</u>	Full recovery of allocated costs. Note: Cost of Dam Safety Control and waste discharge related costs not allocated to the forestry sector.	Not applicable, except where negotiated for new development.	WRM charges introduced fully after registration but capped to R10 per ha plus PPI with 2002/03 as base year.
Stream Flow Reduction Activities <u>Resource poor growers</u>	Full recovery of allocated costs to be achieved in 5 years. Note: Cost of Dam Safety Control and waste discharge related costs not allocated to the forestry sector.	Not applicable, except where negotiated for new development	As above, but subsidised for 5 years from date of registration. Subsidy starts at 100% and reduces by 20% annually. No charge for forest plantation that is <= 10 hectares.
Irrigation <u>Commercial farmers</u>	<ul style="list-style-type: none"> Full recovery of allocated costs Waste discharge related costs not applicable 	<p>GWS:</p> <ul style="list-style-type: none"> Full recovery of Depreciation plus O&M on existing schemes. Full financial cost recovery for new schemes. <p>WMI:</p> <ul style="list-style-type: none"> Full financial cost recovery 	<ul style="list-style-type: none"> Depreciation charge capped to 1.5 c/m³ plus PPI from 2007/08 WRM charge introduced fully after registration of water use in WMA, but capped to 1.5 c/m³ plus PPI from 2007/08. O&M cost increases limited to 50% p.a.
Irrigation <u>Resource poor farmers</u>	<ul style="list-style-type: none"> As above, but subsidised for a 5-year period. Waste discharge related costs not applicable 	<p>GWS:</p> <ul style="list-style-type: none"> O&M subsidised for a 5-year period on existing and new schemes. Depreciation charges waived for a 5-year period. <p>WMIs:</p> <ul style="list-style-type: none"> Subsidies available under certain conditions. 	<p>GWS:</p> <ul style="list-style-type: none"> O&M charges phased in over 5 years after registration at 20% per annum. 0% in the first year. Depreciation charge applied from year 6 onwards and capped to 1.5 c/m³ plus PPI from 2007/08. WRM charges phased in over 5 years @ 20% per annum. 0% in year one.

10.2 Natural Disasters

Section 56 (3) (e) of the National Water Act allows the Minister to provide on an equitable basis for some elements of the charges to be waived in respect of specific users for a specified period of time.

In addition to the support offered hereunder, any relief offered by other government departments at the time of the natural disaster could also be applied to offset further water charges.

10.2..1 Forest fires and floods

In the event of forest fires or floods, when water resources are not in use as a result of damages caused, the Minister may apply her/his mind to grant some form of relief to affected users and will consider and may apply all or some of the following in determining support:-

- The extent of damage to crops.
- The relief will in all cases be limited to the actual Water Resource Management charges.
- Water Resource management charges could be fully or partially waived.
- Charges waived will be for a fixed period of time.
- Under no circumstances will cash grants be provided as relief.

10.2..2 Droughts

During times of droughts when it is necessary to curtail entitlements, the following rules will apply when water restrictions are imposed by the Department on established and emerging farmers on existing Government Water Schemes.

In schemes where the actual available supply is:

- greater than or equal to 70% of the irrigation quota, full charges will apply,
- between 69% and 50% of the irrigation quota, charges will be limited to the WRM charges and the O&M charges, while the Depreciation charges will be waived,
- between 49% and 30% of the irrigation quota, charges will be limited to the WRM charges and 30% of the O&M charges, implying that the Depreciation charges will be waived and a discount of 70% will apply to O&M charges,
- between 29% and 0%, of the irrigation quota, charges will be limited to the WRM charges, implying that the depreciation and the O&M charges will not apply.
- CMA's and WUA's must approach DWAF with a motivation for drought relief.

10.2..3 Purchase of "extra water"

The policy of allowing scheduled irrigators on Government water schemes to purchase "extra water" under certain conditions at heavily subsidized prices will be discontinued. Only under exceptional circumstance, such as an unexpected heat wave, may 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.

10.2..4 Interest on arrear water charges

Arrear water charges will attract interest at rates determined by the Minister from time to time.

11. TRANSPARENCY AND ACCOUNTABILITY

In establishing the pricing strategy, every attempt will be made to control costs by the application of sound financial management principles such as strict budgetary control. The revised 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 disseminated through the accounts receivable system to the water users prior to the commencement of the financial year.

12. IMPLEMENTATION DATE

This Pricing Strategy was gazetted for public comments on 1 July 2005. As required by the NWA, a period of 90 days was allowed for comments, where comments received were considered to enhance the Pricing Strategy, they were included in the final document. The Department wishes to thank all participating individuals and organisations for their valuable inputs in shaping this revised Pricing Strategy.

In order to implement chapter 6.4, dealing with the water resource management component of waste discharge related water use, DWAF will have to formally define the resource quality objectives and also register waste discharges onto the WARMS system. It will therefore not be practical to implement this strategy in its totality until the required support systems are in place. For the 2007/8 price setting year starting in April 2007, DWAF will implement the new pricing strategy in as far as the Water Resource Development and Use of Waterworks (consumptive) charges are concerned, while the rest of the price setting process will be implemented in terms of the 1999 Pricing Strategy. The balance of this pricing strategy will then come into force as soon as the required systems are in place for its effective implementation.

No. 209

16 March 2007

ANNEXURE A

WATER RESEARCH COMMISSION

WATER RESEARCH ACT (Act No. 34 of 1971)

ESTABLISHMENT OF A COLLECTION STRATEGY FOR WATER-RESEARCH CHARGES IN TERMS OF SECTION 11 OF THE WATER RESEARCH ACT, 1971

I, Lindiwe Benedicta Hendricks, MP, Minister of Water Affairs and Forestry, with the concurrence of the Minister of Finance, hereby in terms of Section 11 of the Water Research Act (Act No. 34 of 1971), establish a collection strategy for water-research charges, as contained in the schedule hereto.

SCHEDULE

A COLLECTION STRATEGY FOR WATER-RESEARCH CHARGES**PREFACE**

The Water Research Act (WRA), Act No. 34 of 1971, gives power to the Minister, with the concurrence of the Ministry of Finance, from time to time by notice in the Gazette, to set tariffs in respect of water research charges levied on quantities of water supplied, or made available for use, for various purposes. The charges are paid into a national Water Research Fund and used by the Water Research Commission (WRC) to fund water-centred Research and Development (R&D) on behalf of the nation.

Historically, tariffs relating to water research charges have been reviewed on an annual basis, and adjusted, when necessary, taking into account the R&D needs of the water sector and the rate of inflation. It was accepted that, as from 2004, the 2003/04 tariffs would form a baseline for the ensuing five years and annual tariff increases would be in accordance with the rate of inflation, by notice in the Gazette. Charges are currently based on volumes of water supplied and on irrigated land area. In terms of the WRA, the Department of Water Affairs and Forestry (DWAF) is obliged to collect water research charges on behalf of the WRC, unless the Minister approves otherwise.

Owing to various developments, the WRC has been required to review current practice and develop a new collection strategy, as presented here. The main developments that necessitate the change include:

- The establishment of a pricing strategy for water use charges in terms of Section 56(1) of the National Water Act (Act No 36 of 1998)
- Definitions of water use in Section 21 of the National Water Act
- The implementation of the Municipal Finance Management Act
- Developments to DWAF's computer-based system (SAP/WARMS) for registration and licensing of water use
- Arrangements for the collection of water use charges by DWAF.

Although none of the above-mentioned developments refer directly to water research charges levied in terms of the WRA, they all strongly affect the collection of water research charges by DWAF. DWAF's obligation to continue to collect such charges on behalf of the WRC necessitates a close link to the pricing strategy for water use charges in the interests of efficiency and effectiveness. In practice this means that a common user base will have to be identified and uniform-billing arrangements adopted. However, it should be noted that the setting of water research charges remains independent of changes in water use charges governed by the NWA pricing strategy.

This document sets the strategy for linking the collection of water research charges to the pricing strategy for water use charges, whilst maintaining compliance with the requirements of the Water Research Act.



Lindiwe Benedicta Hendricks, MP
Minister of Water Affairs and Forestry

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ABBREVIATIONS

CMA	=	Catchment Management Agencies
DWAF	=	Department of Water Affairs and Forestry
NWA	=	National Water Act, 1998
WMA	=	Water Management Area
WRA	=	Water Research Act, 1971
WRC	=	Water Research Commission

1. INTRODUCTION

This Collection Strategy contains the objectives, methodology and implementation strategy for setting and collection of water research charges for purposes of funding water-centred Research and Development (R&D) on behalf of the South African water sector and the nation.

One of the key objectives of the collection strategy is to maintain levels of charges consistent with efficient and effective generation, dissemination and use of knowledge products required to sustainably manage South Africa's water resources, effectively deliver water services to all citizens and efficiently and beneficially use our limited water supplies.

DWAF has the obligation to continue to collect water-research charges on behalf of the WRC. In the interests of efficiency and effectiveness with regard to the collection of these charges, revision of the mode of collection is necessary to build a close link to the collection of water use charges as determined by the NWA pricing strategy. In practice this means that a common user base will have to be identified and uniform-billing arrangements adopted.

This document sets the strategy for linking the collection of water research charges to the pricing strategy for water use charges, whilst maintaining compliance with the requirements of the Water Research Act.

2. LEGAL MANDATE TO THE PRICING STRATEGY

In terms of Section 11 of the WRA, the Minister may with the concurrence of the Minister of Finance, from time to time by notice in the Gazette, establish tariffs for water research charges on the basis of water supplied or made available for domestic, industrial or agricultural uses.

3. IMPLEMENTATION OF THE WATER-RESEARCH CHARGE COLLECTION STRATEGY

3.1 Definition of Water Use

Section 11 of the WRA empowers the Minister of Water Affairs and Forestry to levy charges on water supplied or made available for use for agricultural purposes, urban purposes, industrial purposes or any other purposes by any water management institution. At the same time, the Minister may, in respect of the tariff pertaining to such charges, differentiate between different classes of use or user, and may absolve any particular use or user from liability for payment. The Act therefore gives the Minister wide discretionary powers to determine the user base liable for payment of water research charges.

In selecting the user base for the levying of water research charges, and bearing in mind the need to ensure compatibility with the user base liable for payment of water use charges, consideration is given to the definition of water use contained in Section 21 of the NWA. These water uses are given as:

- (a) taking water from a water resource;
- (b) storing water
- (c) impeding or diverting the flow in a watercourse;
- (d) engaging in steam flow reduction activity;
- (e) engaging in controlled activity which has 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 for continuation of an activity;
- (k) using water for recreational purposes.

The above-mentioned water uses can be broadly grouped under three categories in the NWA:

Abstraction-related uses

- Section 21 (a), Section 21 (b) and Section 21 (d)

Waste discharge-related uses

- Section 21 (e), Section 21 (f), Section 21 (g), Section 21 (h) and Section 21 (j)

Non-consumptive uses

- Section 21 (c), Section 21 (e), Section 21 (i), Section 21 (j) and Section 21 (k)

The broad definition of water use in the NWA creates the option of including most, if not all, of the above-mentioned uses in the group which is liable for payment of water-research charges in terms of the WRA.

3.2 Collection Strategy for Water-Research Charges

Although the WRA allows for the inclusion of most of the above user categories in the group liable for payment of water-research charges, the collection strategy for water-research charges will initially focus on the same user group currently (in 2004) contributing towards water-research charges, i.e. those falling in the abstraction-related use category. This includes users of water for domestic, municipal, industrial and irrigation purposes. If need be, the levying of charges on any water use that is not addressed by the current WRA will be subject to an appropriate amendment of the Act.

Payment of water research charges in the case of urban, domestic and industrial uses is currently based on quantities of water supplied. However, in the case of irrigation, where much of the water supplied has not been metered, the WRA allows charges (rates) to be

levied on the area (hectares) of scheduled irrigation land on Government water schemes and schemes falling under Irrigation Boards. The WRA also makes provision for the levying of charges for water made available for all abstraction-related uses, thus providing for the change in the basis of collection of water-research charges, which will allow a simple link to the collection of water use charges under the NWA pricing strategy.

A fundamental aspect of this water-research charge collection strategy is therefore the phasing out of payment of water research rates and charges on the basis of water supplied (for domestic and industrial purposes) and for irrigated land, and the simultaneous phasing-in, for all water uses (irrigation included), of payment on the basis of registered or licensed water use.

Although the basis for levying of water-research charges will be changed, the new collection strategy aims to avoid any increase in charges for the various user groups. The underpinning principle is that in converting from 'water supplied' to 'water made available' as the basis for payment, every effort will be made to ensure that equivalent prices (tariffs) apply. This includes the land-area-based to water-volume-based conversion in the case of the water-research charge for which irrigation is liable.

It should be noted that a previous decision to accept 2003/04 tariffs as a baseline and to link annual tariff increases to the rate of inflation for the ensuing five years will be honoured, provided that national policy does not require a broadening of scope, or intensification, of water research, in which case an amendment of this strategy will be required.

3.3 Determination of Sectoral Water-Research Charges

3.3.1 Water use sectors

The user sectors for which unit sectoral water research charges will initially be levied are:

- Domestic/industrial (water services authorities, industrial, mining/energy)
- Agriculture (irrigation and intensive stock watering) on Government water schemes and Irrigation Boards/WUA schemes.

In time, other users and user sectors will be included, but not without prior consultation with user groups and other interested and affected parties.

3.3.2 Determination of registered water use volumes per sector for pricing purposes

The registered water use in the various sectors must reflect average volumes annually available as determined by using the following methodologies for the water uses as defined:

Domestic/Industrial	Water allocations as reflected on a lawful permit, general authorisation or licence and/or verified as
----------------------------	--

existing lawful use, and amended for assurance of supply.

Irrigation Irrigation quotas, amended for assurance of supply.

Adjustments to the volumes as determined above may be deemed necessary according to the level of under- or over-utilisation of water in a particular WMA. Should this apply, all adjustments will be done in strict compliance with rules laid down in the NWA.

3.3.3 Assurance of supply

Registered water use of various users takes into account the assurance of water availability or supply, according to rules laid down in the pricing strategy for water use charges.

3.3.4 Water-research charges for resource-poor irrigators

Resource-poor irrigation farmers will be exempt from the payment of water-research charges for an initial introductory period of five years or as otherwise negotiated.

3.3.5 Phasing in of water-research charges

The phasing-in of water-research charges based on registered water use will take place concurrently with the phasing-in, in terms of the NWA pricing strategy, of water-use charges in the various WMAs by the relevant water management institutions. Prior to that, the current practice, of levying charges on water provided and rates on listed irrigation land, will remain in force.

3.3.6 Tariffs relating to water-research charges

The Minister from time to time sets tariffs applicable to water-research charges by notice in the Gazette. (The most recent such notice was No. 249 in the Government Gazette of 24 March 2005).

3.3.7 Differentiation and temporary relief with respect to payment of water-research charges

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

- different types of geographic areas
- different categories of water use
- different water users,

or for some elements of the charges to be waived in respect of specific users for a specified period of time.

In terms of the WRA, the Minister has similar powers, which allow the pricing strategy for water-research charges to be consistent with the NWA pricing strategy in this regard.

4. COMMISSION FOR COLLECTION OF WATER-RESEARCH CHARGES

DWAF shall continue to be responsible for collecting charges from the relevant water management institutions and for paying these over to the WRC in accordance to the WRA, for which service the WRC will pay DWAF a commission.

5. BUDGETARY AND FINANCIAL CONTROL

In implementing the water-research collection strategy, every attempt will be made to collect revenue efficiently and maintain strict financial control. In terms of this principle, a budgetary process will be applied in each water management area. Budgets will be forwarded to regional offices for dissemination and discussion with interested parties. Full disclosure of the accounts of the WRC will be made and outcomes of the R&D funding process will be communicated to water users.

ANNEXURE B

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 that would prevail in competitive markets.

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.

Resource Poor Farmers/Forest growers: Entry-level water users who are citizens of South Africa and who are members of the historically disadvantaged population groups.

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

SAPWAT: A software program providing a crop water requirement model for South Africa.

No. 201

16 March 2007

KGORO YA MERERO YA MEETSE LE KAGODIKGWA

MOLAO WA BOSETŠHABA WA MEETSE (Molao wa. 36 WA1998)

TLHAGIŠO YA MAANO A GO BEA THEKO YA DITEFELO TŠA TŠHOMIŠO YA MEETSE GO YA KA KAROLO WA KAROLO 56(1) YA MOLAO WA BOSETŠHABA WA MEETSE, 1998

Nna, Lindiwe Benedicta Hendricks, MP, Tona ya Merero ya Meetse le Kagodikgwa, ka tumelano le Tona ya Matlotlo, go ya ka Karolo 56(1) ya Molao wa Bosetšhaba wa Meetse (Molao wa 36 wa 1998), ke hlagaša maano a go bea theko a tšhomišo ya meetse ao a sego a hlwekišwa, go ya ka moo a tšwelelago ka go šetulo ye.

ŠETULO**MAANO A GO BEA THEKO A DITSHENYAGALELO TŠA TŠHOMIŠO YA MEETSE AO A SA HLWEKIŠWAGO****KETAPELA**

Molao wa Bosetšhaba wa Meetse, 1998 (Molao wa 36 wa 1998), o fa Tona ka tumelano le Kgoro ya Matlotlo maatla, a go hlama maano a go bea theko ya tšhomišo ya meetse ka gare ga tlhako ya ye e lego gona ya pholisi ya mmušo nako le nako ka Kuranta ya Mmušo.


Maano a peleng a hlagašitšwe ka Nofemere 1999 gomme e sa le go thogwa phatlalatšo ya wona go bile le ditlhabollo tsa go fapafapana tšeo di hlokago go sekaseka tšeo di akaretšago:-

- Phethagatšo ya Molao wa Taolo ya Matlotlo a Mmasepala
- Ditlhabollo tša go iša pele go tshepedišo ya dikhomphuthara tša Kgoro bakeng sa taolo ya ditshenyagalego
- Kopantšho ya Tshepedišo ya Tefo ya Go Ntšha Matlakala/Ditšhila
- Kgopelo go tšwa go bakgathatema ya go sekaseka maano
- Diprotšeke tše bohlokwa tšeo di thekgago ke tefo ya ditšhelete ya makala

Ntše le tše di lego ka godimo, Maano a go bea theko a swanetše go ela hloko tlhabollo ya *Catchment Management Agencies*, yeo e tla bago le khuetšo e kgolo ka fao methopo ya meetse e laolwago le go hlokomelwa ka gona.

Tokumente ye bea maano a go phethagatša ditiro tša taolo ya meets go ya ka motheo wa gore mošomiši o a lefa le motšhilafatši o a lefa gomme ke poelo ya tshepedišo ya ditherišano go ya ka fao Molao o nyakago ka gona. Bakgathatema bao ba nago le kgahlego ba tsenya letsogo sebopegong sa bofelo sa tokumente ye a mokgwa wa ditshwayotshwayo, tšeo di akantšwego, gomme di dumeletšwe, tša akaretšwa ka gare ga leano le.

Ke tshema gore magato ao a amogetšwego a dirile dokumente yeo e etšego hloko dikgahlego tša makala a go fapafapana fao ka go le lengwe a tšwetšapele bokgoni le go lokiša go se lekalekane phihlelelong ya meetse ka baka la melao ya peleng. ao ka nako tše dingwe a a hlagile ka baka la melao ya peleng.



Lindiwe Benedicta Hendricks, MP

Tona ya Merero ya Meetse le Kagodikgwa

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DIKHUTSOFATŠO

CMA	=	Dieitšensi tša Taolo ya Polokelo ya Meetse a Pula
CUC	=	Tefelo ya Yuniti ya Letlotlo
DWAF	=	Kgoro ya Merero ya Meetse le Kagodikgwa
GWS	=	Dikimi tša Mmušo tša Meetse
IAP	=	Semela se se sa nyakegego
NWA	=	Molao wa Bosetšhaba wa Meetse, 1998 (Molao wa 36 wa 1998)
NWRIA	=	Eitšensi ya Bosetšhaba ya Infrastraktšha ya Methopo ya Meetse
NWRS	=	Tsela ya Bosetšhaba ya methopo ya Meetse
O&M	=	Mešomo le Tlhokomelo
PPI	=	Mohlagiši wa Taetšo ya Theko
ROA	=	Pušetšo ya Dithoto
RQO	=	Dinepo tša Boleng bja Methopo
SFRA	=	Mešomo ya Phokotšego ya go elela ga meetse
TCTA	=	Taolo ya Thanele ya Trans Caledon

WARMS	=	Tumelelo ya Tšhomišo ya meetse le Tsela ya Taolo ya Boingwadišo
WDCS	=	Peakanyo ya Ditefo tša go Ntšha Ditšhila
WMA	=	Tikologo ya Taolo ya Meetse
WMI	=	Diinstitute tša Taolo ya Meetse
WRC	=	Khomišene ya Dinyakišišo tša Meetse
WRDC	=	Ditshenyagalelo tša Tlhabollo ya Methopo ya Meetse
WRM	=	Taolo ya Methopo ya Meetse
WSDP	=	Lenaneo la Tlhabollo ya Ditirelo tša Meetse
WUA	=	Mekgatlo ya Tšhomišo ya Meetse

1 MATSENO

Tokumente ye ke poeletšo ya mathomo le koketšo ya Tsela ya Theko ya ditefelo tša tšhomišo ya meetse yeo e phatlaladitšwego ke Kuranta ya Mmušo yabo 1353 ya 12 Nofemere 1999.

Tsela ye e laetša peo ya theko bakeng sa go šomiša meetse a go tšwa go methopo ya Afrika Borwa e sego go bea theko ya ditirelo tša meetse, tšeo go šomilwego tšona ka noši ka fase ga Molao wa Ditirelo tša Meetse, 1997. Ka mantšu a mangwe, tsela ye e šoma pele ka molokoloko wa meetse, k.g.r. tšhomišo ya meetse ao a sa hlwekišago (a tlhago) go tšwa mothopong wa meetse le/goba meetse ao a bjago go tšwa go mešomong ya mmušo ya meetse. Ga e šome ka thwii le molokoloko wa bobedi le wa boraro wa meetse, k.g.r. meetse ao a abjago ka bontši (gantši ka mekgatlo ya meetse) gomme a phatlalatšwago ka dintlong (gantši ka maatla a ditirelo tša meetse), ntle le meetse ao a fiwago ke dikimi tša meetse tša mmušo. Tsela ye e šoma ka melokoloko ka moka ya mathomo ya meetse go ya ka moo e laeditšwego ka tšhomišong ya methopo ya fase le ya ka odimo ya methopo ya meetse gomme e akaretša go bea theko ke DWAF gammogo le diinstitute tša taolo va meetse bialo ka ge di hlalošitšwe ka go NWA.

2 TAOLELO YA SEMOLAO

Go ya ka Karolo 56 ya NWA, Tona, ka tumelano le Kgoro ya Matlotlo, a ka hlagiša leano la go bea theko la ditefelo bakeng sa tšhomišo ya meets ka gare ga tlhako ya pholisi ya maleba ye e lego gona, nako le nako ka tsebišo ya Kuranta ya Mmušo.

Maano a go bea theko a na le ditebano, mekgwa le maano a phethagatšo a go bea ditefelo tša tšhomišo ya meetse ka mabaka a:-

- go thekga ka tšhelete taolo ya methopo ya meetse ka DWAF le diinstitute tša taolo ya meetse, ka ditefelo tša tšhomišo ya meetse, Karolo 56 (2) (a).
- go thekga ka ditšhelete tlhabollo ya methopo ya meets le tšhomišo ya mešomo ya meets ka DWAF le diinstitute tša taolo ya meetse, Karolo 56 (2) (b).
- go phethagatša kabo ya ye e lekanago meetse ye e beakantšwego gabotse ya meetse, ka tefelo yeo morago ga fa e laetšwago bjalo ka "tefelo ya ekonomi", Karolo 56 (2) (c).
- go fa tekanyo ya dikgato tša go fapana ya ditefelo tša go ntšha ditšhila tšeo morago ga fa e laetšwago bjalo ka WDCCS, Karolo 56 (5).

3 DITBANYO TŠEO DI BOPAGO MAANO A GO BEA THEKO

Ditebanyo tše di latelago ke tše bohlokwa kudu ge go beakanywa goba go fetolwa maano a go bea theko maano a go bea theko:

- Tekatekano ya Leago

Maano a go bea theko a tefelo ya tšhomišo ya meetse gammogo le go fa thušo ya thekgo ya ditšhelete go tla thuša tekatekanong ya leago le go lokiša go se lekalekane ga peleng, bobedi ka tlhompho le phihlelelo ya go lekalekana ya ditirelo tša kabo ya meetse le phihlelelo thwii ya meetse ao a sa hlwekišwago.

- Kgotlelelo ya ekholotši

Go ya ka Kgaolo 3 ya NWA, dihlokwa tša meetse bakeng sa tirišo ye e kgonthšhago ya tsela ya diphedi tša ka meetseng e swanetše go šireletšwa. Meetse ao a hlokagalago bakeng sa go bewa ka thoko ga ekholotši a swanetše go hlokomelwa gomme ditshenyagalelo tša go lao Resefe di swanetše go lefelwa go bašomiši ka moka bao ba kgonago go fiwa tšhupamolato go ya ka Karolo 56(2) (a) (iv) ya NWA. Go tšwetšapele pabalelo ya boleng bja methopo, molao wa gore motšhilafatši o lefela go ntšha ditšhila e tla amogelwa go maano a a theko.

- Kgotlelelo ya Ditšhelete

Go kgonthišiša kgotlelelo ya ditšhelete ditseno tše di lekanego di swanetše go hlagišwa go thuša sekhwama sa ditshenyagalelo tša ngwaga ka ngwaga tše di amanago le:

- taolo ya methopo ya meetse ya naga.
- tshepedišo, tlhokomelo, mpshafatšo le kaonafatšo ya dikimi tše di lego gona tša meetse tše e lego tša diinstitute tša taolo ya meetse.
- Tlhabollo ya dikimi tše di thekago ke bašomiši ba baswa ka ditšhelete.

Tlhako ya ditšhelete e dumelela boitaolo bja di-WUAs le di-CMAs. Bjalo ka ge go boletšwe peleng ka go Maano a go bea theko, ditshenyagalelo tša ditšhelete ka botlalo tša taolo ya methopo ya meetse le kabo ya meetse di swanetše go hwetšwa go tšwa go bašomiši ba meetse, go akaretša ditshenyagalelo tša letlotlo. Mola go le bohlokwa go bea ditheko tša meetse fase ka moo go kgonagalago, DWAF e swanetše go kgonthišiša gore meetse a bewa theko ka maemo ao a sa fetogego ka kabo ya ye e kgonthšhago ya go ba le bokgoni ya ditirelo. Tsela ye e ka thongwa ka go ela hloko dithibelo tša mafapha a go fapafapana go tlwaela ka pela koketšo ya ditheko.

- Bokgoni bja Ekonomi

Maloka le tlhokego ya meetse, go kgonthiśiśa kabo ya bokgoni ya methopo ya tlhokego ya meet go nyakega gore theko ya meetse e bewe go laetša boleng bja tlhokego, go kgonthiśiśa la mathomo gore meetse a bolokegile gomme la bobedi gore meetse a mangwe ao a šomišetšwago mabaka a boleng bja fase a lebišwa mabakeng a mangwe a boleng bja godimo. Se se ka dirwa ka mokgwa wa taolo goba ka go šomiśa mekgwa ye e amanago le mebaraka. Go bohlokwa gape go kgonthiśiśa gore ditshepedišo tša taolo ya methopo ya meetse tšeo di phethagaditšwego di na le mohola gomme ga e be morwalo wo o sa hlokgalego wa ditšhelete go bašomiśi ba meetse.

4 TŠHELETE YEO E KLEIMIWAGO YA GO SE YE KA THEKO YE E BEILWEGO YA MEETSE

- **Tšhomišo ya meetse ye e dumeletšwego bjalo ka ge go hlalošitšwe ka fase ga Šetulo 1 ya NWA gomme e dumeletšwe ka kakaretšo.** Motho a ka šomiśa meetse ka goba go tšwa go mothopo wa meetse ka makaba ao a kwagalago a bjalo ka tšhomišo ya ka lapeng, temo ye e sego ya kgwebo, nošetšo ya diphoofolo, go tima mollo le tšhomišo ya boitapološo, go ya ka mo go hlagišitšwego ka go Šetulo 1 ya NWA. Ditumelelo ka kakaretšo go ya ka Karolo 39 ya NWA gape di dumelela ditšhomišo tše dingwe tša meetse gore di se ingwadiše, tšeo ka gona di ka se lefišego.
- **Dinyakwa tša motho tša motheo.** Se se emela karolo ya mathomo ya Resefe go ya ka mo go hlalošitšwego ka go Karolo 1 ya Molao gomme e fana ka dinyakwa tše bohlokwa tša bjale le tša išago tša batho ka noši (bogomaponno bja mengwaga ye 10), bao ba direlwago ke methopo ya meetse yeo e amegago gomme e akaretša go nwa, peakanyo ya dijo le maphelo a batho go ya ka ge go hlalošitšwe ka gona bjalo ka dilitara tše 25 go ya nngwe le ye nngwe. Karolwana ya tšhomišo ya Šetulo 1 e na le dihlokwatheo tša botho tša batho ba bangwe bao ba fihlelela go methopo ya meetse thwii.
- **Kgotlelelo ya Ekolotsi.** Ye e emela karolwana ya bobedi ya Resefe gomme e laetša meetse a boleng le bokaakang go batago go sireletša diekhosisteme tša ka meetseng tša meetse a mangwe le o netefatša kgotlelelo ya tšona.
- **Ditlamego tša Boditšhabatšhaba.** Meetse ao a hlokgalago go fihlela go ineela ga Afrika Borwa malebana le meetse a boditšhabatšhaba a tla ba a pele a go kgethwa gomme a tla abelwa bakeng sa mbaka a go bea theko, ntle le ge ditumelelano tše itšego mabapi le kabo ya meetse dinageng tša go neana mellwane di fihleleletšwe.

Meetse ao a hwetšagalago ka morago ga go fihlelelwa ga kleime ya ka godimo a ka abelwa gomme a ka akaretša meetse ao a rekilwego ntle go tšwa tikologong ye nngwe ya taolo ya meetse ka mokgwa wa dikimi tša phetišetšo ya melapo ya ka gare. Tšhomišo ye ya meetse a hlophiwa bjalo ka tšhomišo ye e atlegago ya meetse gomme e swanetše go bewa theko go ya ka leano le.

5 DITLHALOŠO TŠA TŠHOMIŠO YA MEETSE

Karolo 56 ya NWA e laela Tona go hlagaša Maano a go bea theko a ditefo bakeng sa tšhomišo ye nngwe le ye nngwe ya meetse go ya ka mo go hlalošitšwego ka go Karolo 21:

- (a) go tšea meetse go tšwa go mothopo wa meetse;
- (b) go boloka meetse
- (c) go thibela goba go fapoša moela wa tsela ya meetse;
- (d) go šoma ka mešomo ya go fokotša go elela ga meela;
- (e) go šoma ka tiro ya go laolega yeo e ka bago le khuetšo ya tshenyo methopong ya meetse;
- (f) go ntšha ditšhila goba meetse ao a nago le ditšhila ka gare ga mothopo wa meetse;
- (g) go šomiša ditšhila ka mokgwa woo di ka bago le khuetšo ya tshenyo methopong ya meetse;
- (h) go šomiša meetse ao a nago le ditšhila go tšwa go tshepedišo ye nngwe le ye nngwe ya intasteri goba ya maatla a mohlagase;
- (i) go fetoša moelo, mabopo, moela goba mekgwa ya meela ya meetse;
- (j) go tloša, go ntšha goba go šomiša meetse ao a humanwago ka fase ga mobu go tšwetšapele mošomo;
- (k) go šomiša meetse ka mabaka a boitapološo.

Ditšhomišo sa meetse tše di lego ka godimo di ka hlophiwa ka fase ga magoro a mararo ka go NWA:

Ditšhomišo tšeo di amanago le kgopolo

- Karolo 21 (a), Karolo 21 (b) le Karolo 21 (d)

Ditšhomišo tšeo di amanago le go ntšha ditšhila

- Karolo 21 (e), Karolo 21 (f), Karolo 21 (g), Karolo 21 (h) le Karolo 21 (j)

Ditšhomišo tša go se diriše

- Karolo 21 (c), Karolo 21 (e), Karolo 21 (i), Karolo 21 (j) le Karolo 21 (k)

Tšeo di tšago pele tša maano a go bea theko a tšhomišo ya meetse go boletšwego ka tšona ka godimo, le morago ga nako di tla lefelwa meetse ao go hlalošitšwego ka wona kudu ka morago ga ditherišano le bakgathatema. Maano a šetše a beakantšwe gomme a ka fase ga tshekatsheko bakeng sa tšhomišo yeo e amango le kgopolo. Ka phethagatšo ya tsela ya tefelo ya peakanyo ya tšhela ditšhila, bontši bja tšhomišo ye e lego ka godimo e tla fefeletwa. Maano a sa tlhaboliwa bakeng sa tšhomišo ya boitapološo ya Karolo 21 (k), gomme a tla bopa sererwa sa phatlalatšo ya ka thoko.

6 THEKGO YA DITŠHELETE YA TAOLO YA METHOPO YA MEETSE

Ditshenyagalelo tša Taolo ya Methopo ya Meetse di bolela ka mešomo yeo e nyakago šireletša, go abela, go babalela le go laola methopo ya meetse le go laola boleng bja meetse ao a lego ka gare ga Ditikologo tša Taolo ya Meetse (WMA). Ditshenyagalelo tše ga di sepelane le fela le meetse ao a swanetšego go bewa theko, eupša taolo ya meetse ka moka ka gare ga tikologo ya taolo ya meetse. Ditshenyagalelo tše di tlile go akaretša eupša ga di a kgaoletšwa go mešomo ye e latelago:-

- Peakanyo le phathagatšo ya maano a taolo ya meetse.
- Tebelelo le tekolo ya go ba gona le tšhomišo ya methopo ya meetse.
- Dikabo tša tšhomišo ya meetse.
- Taolo ya bokaakang bja meetse, go akaretša le taolo ya meetsefula le komelelo, kabelo ya meetse, taolo ya kgopolo, polokego le mešomo ya go fokotša meela.
- Tšhireletšo ya methopo ya meetse, taolo ya boleng bja methopo le taolo ya tšhilafatšo ya meetse.
- Paballo ya meetse le taolo ya dinyako.
- Tlhabollo ya diinstitute le go dira gore setšhaba se kgone go kgataha tema tšeong sephetho ya taolo ya methopo ya meetse.

Tlhalošo ka botlalo e akaretša pharologanyo magareng ga mešomo ya kgopolo le ya go ntšha ditšhila e hlalošwa moragonyana ka tokumenteng ye..

Mathomong taolo ya methopo ya meetse e be e tla tšwela pele go ba mošomo wa DWAF. Le ge go le bjalo NWA e hlaloša gabotse maikemišetšo a go hlola di-CMAs (tša mathomo tšeo di hlamilwego) tšeo DWAF e tlogo di fa goba ya di arolela mešomo ye bohlokwa ya taolo ya methopo ya meetse (Mešomo ya di-CMAs e tlile go thekgwa ka ditšhelete go tšwa go ditefelo tša taolo ya methopo ya meetse). Go di-WMAs fao di-CMAs di sego gona, DWAF e tla šoma bjalo ka di-CMAs go fihlela di hlangwa. Di ofisi tša selete di tla šoma mešomo ya WRM go di-WMAs tšeo mešomo ka moka e sa neelwago di-CMAs ka baka la go hloka dinolofatši. Mo go di-WMAs tšeo bobedi DWAF le di-CMAs di šomago are mešomo ya WRM, letseno le tla abelanwa ka go lekana go thuša ka ditshenyagalelo gomme pharologanyo ye e tla laetšwa ditefong ka moka tša lefapha.

6.1 Go dira ditekanyetšo tša ditshenyagalelo tša mošomo

DWAF/di-CMAs di tlile go dira ditekanyetšo tša ngwaga bakeng sa tekanyetšo ditshenyagalelo tša mešomo ye e swanetšego go dirwa ke WMA ye nngwe le ye nngwe. Mešomo ya WRM yeo e tla bago ya maleba e laeditšwe ka go šetulo ye ya ka fase. Kgaogano ya mešomo magareng ga ditšhomišo tša dikgopolo le tša ntšho ya ditšhila di tla ithekga go ditekanyetšo tša mešomo ya kgopolo le ye e

kopantšwego. Ditshenyagalelo tša mešomo karolo ya go ntšha ditšhila le mešomo ye e kopantšwego e tlile go šomišetšwa go bea tefelo karolo ya go nšha ditšhila ya WRM.

Ditshenyagalelo tša mešomo ye mengwe e ka no abelwa ka botlalo go mešomo ya kgopolo goba ya go ntšha ditšhila bjale ka ge go laeditšwe, mola go e na le mešomo ye mengwe yeo e kopantšwego ka tlhago. Ditshenyagalelo tša mešomo ye e kopantšwego di swanetše go abelwa magareng ga tšhomišo yeo e amango le kgopolo le go ntšha ditšhila ka tsela yeo e lego pepeneng yeo e laetšago maitekelo ao a itemogetšego ke bolaodi ka go WMA. Kabo ya ditshenyagalelo tša mešomo ye e kopantšwego magareng ga go ntšha ga ditšhila le kakanyo ka gona e tla ba go ya ka maitekelo a bolaodi (methopo) ao a abetšwego mešomo yeo e amanago le kgopolo go e na le maitekelo a bolaodi a go abela tšhomišo ya meetse yeo e amanago le go ntšha ditšhila ka gare ga WMA.

Phetišetšo ya dipeisene tša ka gare e laetša go infarstraktšha yeo e agilwego go fetišetša meetse magareng ga dinoka tšeo di lego di-WMAs tša go fapafapana, go tlaleletša meetse ao a abjago dikhešementeng. Mehlala ke dikimi tša go fetišetša tša Riversonderend – Noka ya Berg, Tugela – Vaal, Orange – Fish, Tugela – Mhlathuze le Usutu – Vaal, tšeo di agilwego ke DWAF.

Meetse ao a swanetšego go išwa ntle ka sekimi sa phetišetšo ya *inter-basin* ba tlile go fokotša kgonagalo ya go hlagiša thekgo ya ditšhelete moabing wa WMA ka ditefelo tša tšhomišo ya meete le go oketša kgonagalo ya tikologo yeo e amogelago. Tahlegelo ye ya letseno go WMA yeo e thušago e swanetše go thekgwa ka tšhelete ke ditshenyagalelo tša tšhomišo ya tšhelete tšeo di kgobokeditšwego ke WMA yeo e amogelago. CMA yeo e amogelago e swanetše go lefela karolo ye e beilwego ya ditekanyetšo tša WRM tša CMA ye e thušago, go ya ka tswala ye e fetišeditšwego yeo e balwago bjalo ka palophatlo ya palomoka ya tswala ye e lego gona ka 98% ya tiišetšo ya ya kabo, go ya ka NWRS.

Ge e le gore WMA ye e amogelago e sa laolwa ke DWAF gomme WMA ye e thušago e o tšea CMA, gona DWAF e swanetše go lefa CMA. Ge e le gore bobedi moamogedi le mothuši WMA di sa laolwa ke DWAF, gona DWAF e tla tšhireletša tefo ye e fetišeditšwego gomme ya šomiša tšhelete ya ka gare ga khetšmente ya mothuši.

Fao e lego gore boleng bja moela go tšwa go moela wa go rotoga wa WMA go ya go moela wa go theoga wa WMA e bea tlaleletšo ya ditshenyagalelo tša taolo ya boleng bja meetse go moela wa go theoga WMA, ditshenyagalelo tše tša tlaleletšo di swanetše go thekgwa ka ditšhelete ke ditefelo tša WRM tša go ntšha ditšhila go moela wa go rotoga WMA. Moela wa go rotoga CMA o swanetše go lefela karolo ye e beilwego ya ditekanyetšo tša WRM tša moela wa go theoga wa CMA (yeo e amago le ditshenyagalelo tsa taolo ya boleng bja meetse), go ya ka thoto ya ditšhila ya moela wa go rotoga wa WMA bjalo ka tekanyo ya palomoka ya thoto ya ditšhila ka go moela wa go theoga wa WMA.

6.2 Mešomo ya Taolo ya Methopo ya Meetse yeo e swanetšego go hlokomelwa ge go bewa theko e akaretša:

No.	Mošomo / Ditiro	Mešomo ya dikgopolo	Mešomo ya go ntšha ditšhila
1	Tsela ya Taolo ya Khetšhemente	• Dinyakišišo tša methopo, dinyakišišo le tlabollo ya tsela ye e kopantšwego	• Leano la taolo ya boleng bja meetse
		• Maano a kabo	
2	Dikgato tše di laeditšwego methopong	• Tharollo ya ditikologo tše di šireleditšwego, Peakanyo & Dinepo tša taolo ya boleng.	
3	Tumelelo ya tšhomišo ya meetse	• Boingwadišole tiišetšo tšhomišo ya meetse	• Go ntšha ditšhila le laesense ya ka lewatleng
		• Kgopolo & laesense ya mešomo ya phokotšo ya go elela ga meela • Melawana ya polokego ya matamo	
4	Taolo le tiišo ya tšhomišo ya meetse	• Mešomo ya kgopolo & phokotšo ya go laesense ya go elela ga meela • Taolo ya polokego ya matamo (matamo a praebete)	• Go ntšha ditšhila le taolo ya ka lewatleng & tumelelano ya go lebelela
5	Taolo ya dikotsi	• Taolo ya meetsefula le komelelo	• Ditiragalo tša go loga maano a tšhilafatšo le dikarabo (taolo)
6	Mnaneo a taolo ya methopo ya meetse	• Mananeo ao a kopantšwego	• Mnaneo a go ntšha ditšhila [mohl. Theknolotši ya go hlwekiša, diphetho tša kitlanego, maano a taolo ya ditšhila]
		• Mananeo a Paballo ya meetse & taolo ya dinyakwa	
7	Tlhabollo ya diinstitute tšeo di amanago le meetse	• Go kgatha tema ga batšeakarolo, matlafatšo, tlhabollo ya diinstitute & le kgokaganyo ya mešomo	
8	Taolo ya meetse a sekoro	Mohl. <i>hyacinth</i>	
9	Dimela tše di sa nyakegego tša lefase (IAP) (lebelela 6.5.7)	• Taolo ya dimela tše di sa nyakegego ka khuetšo ye mpe methopong ya meetse; mohl. Dizoune tša	

No.	Mošomo / Ditiro	Mešomo ya dikgopolo	Mešomo ya go ntšha ditšhila
		riphariene, ditikologo tša dithaba, mehlaka le ditikologo tšeo go ka bago le khuetšo go <i>di-aquifers</i> .	
10	Geohhaedrolotši le haedrolotši (lebelela 6.3.5)	<ul style="list-style-type: none"> • Tebelelo ya meetse a mobung & kgobokanyo ya tshedimošo • Kokeletšo le tlhokomelo ya dathapeisi ya haedrolotši & kgobokanyo ya tshedimošo • Tebelelo ya boleng bja meetse & kgobokanyo ya tshedimošo 	
11	Taolo le &Ditshenyagalelo	Taolo & ditshenyagalelo tša ofisi goba CMA	

6.3 Tiišetšo ditefelo ka WMA tša taolo ya methopo ya meetse ya lefapha wa (WRM) ka WMA ka tšhomišo ya meetse

6.3.1 Mafapha a Tšhomišo ya meetse

Mafapha a tšhomišo ao taolo ya methopo ya meetse e tlogo di lefiša di tla balwa ka tsela ye e latelago :

- Ya legae/ya intasteri (balaodi ba ditirelo tša meetse, ya intasteri, ya meepo, maano)
- Temo (nošetšo ya puno ya temo)
- Phokotšo ya go elela ga moela (kagodikgwa ya kgwebo bakeng la kgato ye, mafapha a mangwe a ka tsenywa)

6.3.2 Tiišetšo ya go ba gona ga meetse

Meetse a go šomišetšwa puno a hwetšagala goba ga a hlokomelwe mfelong ao a tiišeditšwego gomme se se swanetše go laetšwa ditefong tša ngwaga ka ngwaga bakeng sa ditirelo tša taolo ya methopo ya meetse. Tiišetšo ya go ba gona e hlokomelwa ka go ngwadiša bolumo ya tšhomišo ya lebaka le le telele ya ngwaga ka ngwaga. Tharollo ye e swanetše go hlokomela histori ya go ba gona ga meetse ka pula, pheteledi, le mekgwa ya polokego go ya ka bašomiši ba meetse le morwalo wa mapheko a meetse nakong tša komelelo. Tšhomišo ya meetse ya lebaka le letele e ka thewa godimo ga dikabo tša meetse tšeo di swanetšego bjalo ka tšhomišo ya semolao yeo e lego gona, ya išwa fase go laetša tiišetšo ya go ba gona.

6.3.3 Tharollo ya dibolumo tša tšhomišo tša ngwaga ka ngwa ka WMA bakeng sa go bea theko

Tšhomišo ya meetse ye e ngwadišitšwego mafapheng a go fapafapana e swanetše go laetša dibolumo go ya ka mo di laeditšwego ka go šomiša mekgwa ye e latelago go ya ka mo go hlalošitšwego.

Karolo 21 (a) tshomišo

Ya legae/ya Intasteri

- Dikabo tša meetse bjalo ka ge di laeditšwe tumelelong ya semolao, tumelelo ya kakaretšo goba laesense goba yeo e nago le tšhomišo ya semolao yeo e lego gona go ya ka Karolo 32 ya NWA, gomme e fetotšwe bakeng sa tiišetšo ya kabo.

Temo

- Tšhomišo ya meetse ya semolao yeo e lego gona yeo e amanago le nošetšo ya temo goba kabelo ya dilaesense tše di swa gomme di fetoletšwe tiišetšo ya kabo. Lenaneo la SAPWAT leo le tšweleditšwego Khomišene ya Dinyakišišo tša Meetse goba mekgwa ye mengwe go ya ka moo e dumeletšwego ke Kgoro, e tla šomišwa go laetša bolumo ya palogare ya tšhomišo ya ngwaga ka ngwaga. Dikabelo tša nošetšo, tšeo di fetotšwego bakeng sa tiišetšo ya kabo, di tlile go ngwadišwa ditikolong tšeo di bego di laola meetse peleng le mešomo ya meetse yeo e bego e le diinstitute tša taolo ya meetse.

Karolo 21 (b) tšhomišo

- Fao matamo a go bolokela a lego gona go oketša boleng bja bodulo bja ruri bja thoto gomme letamo le hwetša meetse a lona go tšwa go noka yeo e nago le tiišetšo ya moela wa fase, goba e fepša ka moela woo o laowago ke DWAF, Ggoba institute ya taolo ya meetse, motlatšo wa mathomo, ge e le gore ke letamo le leswa, o tla laetša bolumo yeo e tlogo šomišwa ya ngwaga ka ngwaga. Bolumo yeo e ngwadišitšwego, go ya ka peo ya theko e tlile go thewa godimo ga tahlegelo ya tšhelete ya moputso ya ngwaga ka ngwaga go tšwa go kabo ka botlalo ya tikologo ya bokagodimo bja letamo ka fase ga palogare ya mabaka a klaemete le pula. Karolo 21(b) e tla hlophiwa bjalo ka ya legae/ya intasteri gomme ya lefišwa ka fase ga lefapha le

Karolo 21 (d) tšhomišo

SFRA (Kagodikgwa)

- Mananetlhopho ao a fetotšwego go ya ka Pego ya WRC yabo TT 173/02 (Aprele 2002): Tekanyetšo ya diphokotšo tšeo di hlolwago ke diteišene tše bjalo tša kgwebo ka Afrika Borwa

[MB Gush, DF Scott, GPW Jewitt, RE Schulze, TG Lumsden, LA Hallows le AMM Gorgens] goba mekgwa ye mengwe yeo e dumeletšwego ke DWAF e tla šomišwa go laetša palogare ya tšhomišo ya nwaga ka ngwaga ya dithokgwa tše dilego gona le go humana dilaesense tše diswa.

Palomoka ya bolumo ye e ngwadišitšwego ya tšhomišo ya meetse ka WMA bjalo ka ge e e swerwe ke WARMS e swanetše go bapetšwa le palomoka ya letseno la methopo ya bjale ka tiišetšo ya 98% ka gare ga WMA, yeo e abelwago mabaka a puno, go ya ka NWRS goba ditharollo tša bjale. Kabo ye ya bolumo ga e a swanela go akaretša palo yeo e beetšwego ka thoko bakeng sa Resefe, dikgapeletšo tša semolao le diphetišetšo tše dilego gona go di-WMAS tše dingwe.

Fao e lego gore meetse ka go WMA a šomišitšwe ka botlalo goba abetšwe go feta tekanyo (tšhomišo ya boingwadišo e feta letseno leo le abetšwego) palomoka ya bolumo ya tšhomišo ya meetse ya mafapha yeo e ngwadišitšwego e tla laetša ditefelo. Ka go WMA yeo e sa šomišwago ka golekana, bolumo ya ya meetse ao a abelwago a tla laetšwa ka go šomiša ditekanyo tšeo di ngwadišitšwego ke lefapha le lengwe le le lengwe letsenong le le abetšwego.

6.3.4 Ditefelo tšeo di Abetšwego Mafapha

Ditefelo tša mošomo wa taolo ya methopo ya meetse di swanetše go abelwa mafapha ka tšhomišo ya tekanyetšo ya palogare ya bolumo ya lefapha ya ngwaga ka ngwaga bjalo ka ge e ngwadišitšwe, di laetšago tiišetšo ya kabo. Ka gona kabelo ya ditshenyagalelo e tla hlokomela tiišetšo ya kabo gomme ya aroganya mešomo ka bogare. Mešomo ye mengwe e tla hola fela mafapha a mangwe gomme ka gona e ka se abelwe mafapha ka moka basomiši. Dikabelo tša ditefo tša tšhomišo yeo e amanago le kgopolo di tla laetšwa ka mokgwa wo o latelago:-

- **Tša legae/tša intasteri** - Lefapha le le tla goga mešomo ka moka yeo e amanago le dikgopolo e tla bitša ka go lekana dišereng tša yona tša palomoka ya tšhomišo ya thušo tikologong ya taolo ya meetse. Dinyakwa tša motheo tša botho (lebelela Karolo 4) di tlile go thušwa ka thušo ya ditšhelete ya dišere tša go lekalekana.
- **Temo** - Lefapha le le tlile go goga mešomo yeo e amanago le tiišetšo amanago le mošomo wa tiišetšo, ka go lekana le tšhomišo ya tšweletšo.
- **Mešomo ya phokotšo ya go elela ga moela** - Diteišene tse go boletšwego ka tšona di tlile go goga ditshenyagaglelo ka moka tšeo di amanago le mošomo wa tiišetšo, ka go lekana le tšhomišo ya tšweletšo, ntle le taolo ya polokego ya matamo.

Theko mošomo wa teko ya malebana le phetišetšo ya WMA e tlile go abelwa fela mafapha ao a hlegago thwii go tšwa go phetišetšo ka dikabo tša meetse go moamogedi WMA.

6.3.5 Tšehaedrolotši le Haedrolotši

Tshenyagagalelo ye kgolo ka fase ga mošomo wa Taolo ya Methopo ya Meetse ya ka godimo ke go lebelea gomme e arogantse ka:-

- **Mabaka a mošomo** - Mohuta wo wa tebelelo o bohlokwa kudu bakeng sa taolo ya methopo ya meetse le go bea tšhupamolato wa tšhomišo ya meetse.
- **Marangrang a bosetšhaba** - Marangrang a bosetšhaba a akanyeditšwe tebelelo ye e kgontšhago ya methopo ya meetse ya setšhaba bakeng sa mabaka a morero wa methopo ya meetse ya bosetšhaba. Ditshenyagalelo tša go aga tša ditišiši tša go lekanyatša le tša tebelelo ya boleng le bokaakang bja meetse di na le mešomo ya bosetšhaba gomme e dumelelwa ke ditšhelete. Ofisikgolo ya DWAF le diofisi tš selete gabjale di di dira kabelo ye kgolo ya ditšhelete ka golaetša bohlokwa bja tebelelo mafelong ao a lego gona a dikelo. Data le tshedimošo yeo e humanwego mafelong ao a lego gona le a maswa a ka hlega thwii skimming se itšego goba go tikologo ya taolo ya meetse. Mo ditabeng tše go a kwagala go beela WMA theko ye itšego goba skimi sa meetse karolo ye e kwagaalgo bakeng sa mohuta wa wa tebelelo.
- **Tebelelelo ya tumelelo** - Ditišetšo tša resefe di a dirwa gomme di tla dirwa le išago. Go bohlokwa go lebelela go ba gona ga resefe ka mehla. Netweke yeo e lego gona e tla šomišetšwa mabaka a tebelelo ya resefe. Moo e lego gore se ga se kgonagale, gomme dintlha tše di šwa tša tebelelo di a hlokagala moholegi WMA goba sekimi se tla thekga ka ditšhelete ka ge se e le karolo ya taolo ya methopo ya meetse. Se se tla hlalalala ka go ditefelo tša taolo ya methopo ya meetse goba ka fase ga ditefelo tša tebelelo le tlhokomelo ka fase ga Karolo 7.12.

Go swanetše go elwa hloko gore tlhokagalo ya tebelelo, bjalo ka ge e e hlagišitšwe ka lenaneong la tše bohlokwa tša ditišiši tša tekanyo, e tšwa go ditherišano ka bophara tše di laeditšego dinyakwa tše tša peakanyo, tshepdišo, taolo ya methopo ya boleng, ponagalo le taolo ya meetse a mobung, meetsefula le taolo komelelo. Ditefelo tša tše ka moka tša ka godimo di tlile go dirišwa go ditšhomišo tše itšego tša tikologo ya taolo ya meetse goba dikimi tše itšego tša meetse.

6.3.6 Ditefelo tša Taolo ya Methopo ya Meetse

Ditefelo tša Taolo ya Methopo ya Meetse go WMA di tlile go balwa ka tsela ye e latelago:

- Palomoka ya tekanyetšo ya ditshenyagalelo mošomom=ng wo mongwe le wo mongwe e tlile go aroganywa ka dibolumo tšeo di ngwadišitšego go fihla go yuniting e tee ya mošomo.
- Mo go di-WMAs tšeo e lego gore tswala ye e abetšwego (water meetse ao a legogona go šomišwa) e feta dibolumo tše di ngwadišitšwego, go tla ba le phokoletšo, yeo e tla laetšwago ke go šomiša tswala ye e abetšwego go laetša yuniti yeo e lefišwago go e na le dibolumo.
- Ditefo tšeo dilekantšhitšwego di tla šoma fela go mafapha ao a gokago ditefo tše bjalo (mohlala. Makala a kagodikgwa a ka se akaretšwe dittefišong tšeo di amanago le tlhahlobo ya polokego ya matamo).
- Tefišo ya yuniti ya mešomo ka moka WRM ya maleba e tlile go diragala go dibolumo tša tšhomišo ye nngwe le ye nngwe yeo e ngwadišitšwego go fihla go tefišo e tee go tšhomišoye nngwe le ye nngwe ya WRM.

Ntle le ge go irilwe dipeakanyo tše dingwe tšeo di dumeletšwego ke DWAF/CMA ditefo di tlile go hlola tefo ya go se fetoge, yeo e tlogo lefelwa ka kgwedi tše tshela bakeng sa mafapha a nošetšo le phokoletšo mafapha a nošetšo Boleng bja maksimumo wa bo tlo laetšwa ke mabaka a histori, ekonomi ya leago le dikakanyo tše dingwe tšeo di tla bego di thekgwa ke ditheko tša tšhelete ya Mmušo. Boleng bja minimumo ya kemišo ya ditefo boka bewa ke di di-CMA fao e lego gore kabelo ya ditefo e tla feta letseno. Diputsetšo tša phetišetšo ya ka gare ya ditefo tša WMA transfer e tlile go dirwa ka ditefokgaoletšo tša go lekana ta kgwedi ka kgwedi.

Go swanetše go elwa hloko gore ge e le gore ditefelo tša tšhomišo ya meetse di fase kudu, di tlile go hlola diinstitute tšeo di sa šomego, ditirelo tša methopo ya meetse tša go se lekanele le kakaretšo ya poleomorago ya methopo ya meetse Ka gona go na le tlhokego ya go beakanya ditefo tša kgonthe tša godimo nako le nako go thuša tefo le go dira gore diinstitute tša taolo ya meetse di kgotlelele, go sa hlokomologe ditšhitišo ka gare ga mafapha tšhomišo.

6.4 THIŠETŠO YA DITEFO TŠA TAOLO YA METHOPO YA MEETSE YA MAFAPHA KA WMA BAKENG SA Tšhomišo ya meetse yeo e yeo e amanago le ntšho ya meetse

6.4.1 Mafapha a Tšhomišo ya meetse

Mafapha ao a go tšona go nago le ditefišo tše di manago taolo ya methopo ya meetse, ditefelo tša gona di tlile go balwa go ya ka ditefo tša kakanyo, e lego mmasepala (ya legae), ya intasteri, moepo, enetši le temo (go sa akaretše mešomo ya phokoletšo). Le ge go le bjalo, mo go baling ga tefo ye, phapano e swanetše go dirwa magareng ga:

- Ntliha ya ditahlo tša methopo yeo e lokollwago thwii bogodimong bja methopo ya meetse

- Tokollo nageng yeo e theilwego godimo ga dinomofatši (ka kgonego ya dikhuetšo), bjalo ka khuetšo ya nošetšo, matamo ao a nago le moriti le matamo ao a moyafalago
- Ntlha ya ditahlo tša methopo ya tikologo ya ka lewatleng (dithsila tša ka lewatleng)

6.4.2 Tiišetšo ya merwalo/dithoto tša ngwaga ka ngwaga ke WMA ka mabaka a go bea theko

Ditšhila di hlalošwa go ya ka Karolo1 (1) (xxiii) ya NWA. Palelo ya ditefelo e tla thewa godimo ga thoto ya ditšhila tša go ngwadišwa tše di lokollotšwego tša letswai le fosforase, bjalo ka ge di emela mathata a mabedi a bohlokwa ka mono Afrika Borwa a boleng bja go phatlalala ga meetse bjo bo theilwego godimo ga:

- Boima bja letswai bo tla lekanywa ke go šomišwa ga tsepedišo ya mohlagase.
- Fosforase (bjalo ka phepo yeo e thibelago *eutrophication* ya meetse ao a hlwekilego) e tla lekanywa go šomišwa fosforase (fosfeite).

Mekgwa ye e latelago e tla šomišetšwa go bala bontši bja ditšhila bakeng sa magoro a tšomišo ya meetse bakeng sa tokollo ya ditšhila bjalo ka ge go hlalošitšwe:

Karolo 21 (f) tšhomišo - Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tiišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Karolo 21 (g) tšhomišo - Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tiišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Karolo 21 (h) tšhomišo
Ditšhila tša ka lewatleng - Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tiišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Tše dingwe - Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo

atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Karolo 21 (e) tšhomišo

Nošetšo ya naga ka ditšhila [S37(1)a]

- Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Ntšho ya ditšhila yeo e laolwago [S38(1)] - Merwalo ya ditšhila tša letswai le fosforase tše di lahlilwego di balwa bjalo ka palogare ya tlhokomedišišo atiša ka bolumo ya go tšha go ya ka fao e tšwelelago ka tumelelong ya semolao goba laesense/ tumelelo ka kakaretšo le/goba e tišeditšwe bjalo ka tšhomišo ye e lego gona ya semolao.

Ntlha ya mothopo wa letswai le morwalo wa ditšhila tša fosforase ka go WMA e tlile go balwa go tšwa go morwalo wo o lokollotšwego wa go ngwadišwa go ya ka Karolo 21(f). Se se tlile go hlaolwa go tšwa go palomoka ya thoto ya ditšhila ya ka dipula tša lewatle [ka fase ga S21(f)] le palomoka ya letswai le thoto ya ditšhila tša fosforase yeo e lahlilwego [S21(g)] goba naga [S21(e)]

6.4.3 Kabo ya Ditshenyagalelo go makala

Ditshenyagalelo tša mošomo wa taolo ya mothopo wa meetse yeo e nago le tekanyetšo yeo e abetšwego tšhomišo ya meetse yeo e amanago le tahlo ya ditšhila e tla Abelwa go ya ka tekanyetšo ya maitekelo a bolaodi ao a a šomišwago ka go WMA. Mešomo ye mengwe e tlile go hola fela goba ya amana le magoro a itšego a tšhomišo ya meetse gomme ka lebaka leo e tla Abelwa mafapha ao. Gago phapano yeo e tlogo dirwa magareng ga mafapha ao a lego magorong a tšhomišo ya meetse. Dikabo tša ditshenyagalelo di tla thewa godimo ga:-

- **Ntlha ya ditahlo tša methopo** - Maitekelo a taolo ya tahlo ya ditšhila nageng, goketšo ya ditshenyagalelo ka moka tšeo di amanago le tahlo ya ditšhila.
- **Ditšhila tša ka lewatleng** - Maitekelo a taolo ya tahlo ya ditšhila ka lewatleng, kgoketšo ya ditiro tša tahlo ya ditšhila, ntle le tebelelo ya methopo ya meetse, dikgato tše di lebantšwego methopong le taolo ya sekoro sa ka meetseng.

- **Tahlo ya Ditšhila dinolofatšing/ naga** - Maitekelo a taolo ya tahlo ya ditšhila nageng, goketšo ya ditshenyagalelo ka moka tšeo di amanago le tahlo ya ditšhila.
- **Nošetšo ya naga yeo e nago le ditšhila waste** - Maitekelo a taolo a khuetšo ya nošetšo a goketšago ya ditshenyagalelo ka moka tšeo di amanago le tahlo ya ditšhila.

Ditshenyagalelo tša tlaleletšo ya taolo ya boleng bja meetse tšeo di amanago le tahlo ya thoto ka gare ga moela wa WMA di tla abelwa go magoro a tšhomišo ya meeste ya tahlo ya ditšhila, ntle le ditšhila tsa ka lewatleng , go ya ka ditekanyo tša maitekelo ao a swanago a taolo.

6.4.4 Ditefelo tša taolo ya methopo ya meetse (Go ntšha ditšhila)

Ditšhila tša meetse tšeo di amanago le ditefelo tša taolo ya meetse tikolgong ye nngwe le ye nngwe ya legoro la tšhomišo ya meetse le tlile go laetšwa ka palomoka ya tefo yeo e abjago legorong le lengwe le le lengwe ka palomoka ya thoto yeo e ngwadišitšwego ya letswai le/ goba fosforase bakeng sa legoro la tšhomišo ya meetse. Tefo ya kabo yeo e swanetšego go hwetšwa ka ditefo tšeletswaing le/ goba fosforase e tla thewa godimo ga nmaitekelo a taolo ao a amango le mathata a mabedi a boleng bja meetse ka gare ga WMA. Go di-WMA tše dingwe, se se ra gore ke dithoto tša ditšhila tša letswai le fosforase fela tseo di tlogo šomišetšwa go kgoboketša ditefo, mola go MWA tše dingwe ditšhila tša letswai le tša fosforase di tlogo kalwa.

Ditefeo di tla hlola tefotlengwa , yeo lenanefefo la yona le tlogo romelwa ka kgwedi go goba dikgwedi tše tshela, go ya ka tatelano ya go tšhupasekoloto ya tšhupasekoloto.

6.4.5 Phethagatšo ya tefo

Tefo ya WMA ya tahlo ya matlakala e tla phethagatšwa ka morago ga gore dinyakwa tša boingwadišo bja dilaesense, tumelelo ka kakaretšo le tišetšo ya tahlo ya ditšhila ya semolao yeo e lego gona e fetšwe .

6.5 Dipeakanyo tše dingwe tša thekgo ya ditšhelete le dikiletšo

6.5.1 Mellwane ya SFRA (Kagodikgwa)

Ditefelo tša WRM tša lefapha la kagodikgwa di kgaoletšwe go R10 hektahara le Mateng a Theko ya Motšweletši (PPI) tekanyo (%) ka Aprele ye nngwe le ye nngwe ngwageng wa 2002-03 wa ditšhelete. Balemi ba methopo ya go hloka le ba go hloka nošetšo ka naga ya go lekana goba ya ka fase ga dihethhara tse lesomeka fase ga temo ba ka se lefišwe.

6.5.2 Nošetšo

Taolo ya Methopo ya Meetse ge lefapha la nošetšo nošetšo di kgaoletšwe go disente tše 1.5 go m³ le tekanyetšo ya PPI ya (%) ka Aprele ya ngwaga wo mongwe le wo mongwe ka 2006/7 bjalo ka ngwaga wa motheo lefapheng la temo bjalo ka ge e badilwe ka fase ga leano la pgo bea theko la e be e tla ba ka godimo ga tšhelete yeo e kgaoletšwego ya disente tše 1.5 go m³ (ka baka la kuetšo go ya PPI yeo e tšwago go ditefo tša ka godimo ga disente tše 1.5 ngwageng wa go feta), ke moka tefelo ya kgonthe ya godimo e tlile go šomišwa bjalo ka notheo wa go bea theko.

6.5.3 Tlhagišo ya Ditefelo tša WRM

Ditefo tša WRM tša balemi ba go hloka methopo le balemi ba dithokgwa di tla thoma ka morago ga mengwaga ye mehlang ka thuša ya ditšhelete yeo e tlogo humanwa go tšwa go baholegi.

Pholisi ya thušo ya thekgo ya tšhelete yeo e fapanego e tla šomišwa go laetša ditefo tša ngwaga ka ngwaga tšeo di swanetšego go hwetšwa go tšwa go balemi bao ba hlokago methopo le balemiši ba dithokgwa. Lenanetlhopho leo le laetšago dintlha ka botlalo tša thušo ya thekgo ya tšhelete le hwetšagala ka goKarolo 10.1. Thušo ya thekgo ya ditšhelete e e thoma ka tšatšikgwedo a boingwadišo la tšhomišo ya meetse ke balemi bao ba hlokago ka bobona goba balemiši ba dithokgwa bao ba hlokago.

6.5.4 Mešomo ya WRM yeo e dirwago ke Makgotla a Meetse, di-CMAs and di-WUAs legatong la DWAF

Moo e lego gore, mohlala Mekgotla a Meetse, di-CMAs, di-WUAs goba mmušoselegae o dira mešomo ya taolo ya meetse legatong la DWAF, eitšensi goba kemedi ya maleba le tumelano ya putsetšo e tla ngwalwa magareng ga DWAF le Lekgotla la Meetse la maleba, CMA, WUA goba mmušo wa selegae.

6.5.5 CMA bjalo ka kemedi ya DWAF ya Mešomo ya Setšhaba

CMA e ka kontrakwa bjalo ka protšeke/lenaneo le le kgethegilego (goba ya fiwa maatla) ke DWAF go phethagatša mešomo ye itšego ya bosetšhaba, yeo DWAF e tla ethekgago ka tekanyetšo ya palamente. Tefo ya ditirelo goba ya taolo e tla lefelwa go CMA ke DWAF bjalo ka mabaka a konrata goba a boemedi. Mešomo yeo e tla dirwago e tla akaretša:

- Tebelelo ya methopo ya bosetšhaba ya meetse (ge e le gore ga e dirwe ke institute ye nngwe)
- Mananeo goba diprotšeke tša DWAF tša taolo ya methopo ya meetse, fao e lego gore CMA e šoma bjalo ka kemedi ya phethagatšo legatong la DWAF, mohlomongwe go akaretša le laensense ya kgapeletšo le tlhopho.
- Mananeo a Bosetšhaba a tilhabollo le/goba matlafatšo lego gore CMA e šoma bjalo ka kemedi ya phethagatšo legatong la DWAF .

6.5.6 Methopo ye Mengwe ya letseno ye e ka bago gona ya CMA

Godimo ga ditefelo tša tšhomišo ya meetse le thekgo ya ditšhelete ye e ka bago gona go tšwa go tekanyetšo ya palamente, go na le methopo ya letseno ya semolao ya go fapafapana yeo CMA e ka e naganago ka yona.

- Ditumelelo tša boitapološo - Ka morago ga ge tumelelano ya tšhomišo ya meets a boitapološo yeo e swanetšego go akaretšwa ke tokumente ya tsela ya go bea theko yeo go boletšwego ka yona ka go Karolo 5, e šetše e thomilwe, CMA e tla ba le maikarabelo a go phethagatša, go laola le go lebelela tše dingwe tša ditumelelano tše.
- Ditefo tša kgopelo ya laesense - CMA e swanetše go amogela karolo e kgolo ya tefo ya kgopelo ya laesense ka pela ka mo go ka kgonegago, mesomo ya laesense ya go phethagatša gomme mafelolong e swanetše go amogela tefo ka moka ka morago ga ge e le maikarabelo a mmušo.
- Thekgo ya dimpho le thekgo ya ditšhelete - CMA e ka thekga ka tšhelete mešomo ya yona ka mothopo wo mongwe le wo mongwe wa semolao godimo ga ditefo tša tšhomišo ya meetse le ditekanyetšo tša palamente, tšeo di akaretšago thekgo ya dimpho le thekgo ya ditšhelete. Le ge go le bjalo, go bea dilo pepeneneng e swanetše go lotwa, ka ge kgahlego ya phapano ya nnete goba ye e gononwago e swanetšego go phengwa. Tšona di swanetše go akaretša dithibelo godimo ga mehuta ya mešomo ye e swanetšego go thekgwa, kudukudu go tšwa go mekgatlo yeo e nago le kgahlego ya WMA. Dikabelo ka moka tša bathekgi ba tšhelete le dimpho ba tekanyo ya R2000 ba swanetše go humana tumelelo ya pele go tšwa go Tona ya Merero ya Meetse le Kagodikgwa.
- Ditefelo tša kontraka - CMA e ka dira mešomo ya tlaleletšo ka ntle ga WMA ya yona, gammogo le mešomo yeo e tswalanago le mešomo goba taolelo ya yona, ge fela e le gore ga e tsenye mešomo ya yona kotsing goba go ama institute ye nngwe ya taolo ya meetse gampe .
- Dithušo tša go dirwa ka botho - Le ge e le gore dithušo tša go dirwa ka botho ga di laetšwe gabotse bjalo ka letseno, di ka fokotša ditshenyagalelo le letseno leo le hlokalagalo la CMA. Di lebane kudu bakeng sa mešomo yeo e amanago le tlhabollo ya diinstitute le le go kgathata tema ga batšeakarolo, eupša di akaretša mekgatlo ye mengwe yeo e swaraganego le go lebelela le ditiro tše dingwe tša taolo ya methopo ya meets tšeo di kgokaganywago ke CMA. Dithušo ka moka tša botho tšeo di fetago R2000 di tlile go hloka tumelelo ya peleng go tšwa go Tona ya Merero ya Meetse le Kagodikgwa.

Nako le nako Tona o swanetše go sekaseka le go fetola boleng ka kabo ya tebogo ya bonnyane, dithušo le dithekgo tša ditšhelete di hloka tumelelo ya ya pele ka mokgwa a tsebišo ya go ngwalwa.

6.5.7 Go hlwekiša ga Dimela tše di sa Nyakegego (IAP's)

Ditshenyagalelo ka botlalo tša taolo ya di- IAP tše dingwe di ka lefišwa go bašomiši bao ba amegago ba meetse. Malebana le se Ofisi ya Tikologo goba CMA ya išago, ka ditherišano le bakgathatema bao ba amegago, bat laeletša gore

taolo ya di-IAP go *catchment* ye itšego e bohlokwa bakeng sa thireletšo ya meetse, go tšwa go kgetho tša go fapafapana tšeo di lego gona, taolo ya di-IAP le go se bitše tšhelete ye ntši gomme e ka ba tiro ye kaone ya go oketša sebaka se se telele sa tšhireletšo le go ba gona ga meetse. Ka morago ga gore go fihlelelwe ditumelelano ka ga mokgwa wa taolo ya di-AIPs, gomme gpele go iwa pel ka kwega, palomoka ya ditshenyagalelo tša taolo e swanetše go boledišanwa le ka moka bao ba amegago. Ditshenyagalelo tše di ka thekgwa ke thekgo ya tšhelete di le di le gona gomme di le maleba.

Tefo ya taolo yeo go dumelelanwego ka yona e tla abelwa go mafapha a basomiši ka moka ba meetse ka go lekana go iša go dikgopolo tšeo di amanago le tšhomišo ya meetse.

Moo e lego gore ga go a fihlelewa ditumelelano magareng ga mafapha a go šomiša meetse, Diofisi tša Tikologo goba di-CMAs di tla tšwela pele ka tshomišano le mafapha ao a dumeletšego go kgatha tema tshepedišong ya tokollo. Meeste a tlaleletšo ka morago ga go tea resefe ya ekolotši le go fokotša tlaleletšo ya kabo e ka abelwa mafapha ao a kgathilego tem protšekeng ya tokollo.

7. THEKGO YA DITŠHELETE YA TLHABOLLO YAMETHOPO YA MEETSE LE MEŠOMO YA MEETSE

Tlhabollo ya Methopo ya Meetse le mešomo ya meetse e laetša go peakanyo, moakanyetšo, kago, tshepedišo, tlhokomelo, mpshafatšo le kaonafatšo ya dikema tša Mmušo tša meetse le dikema tšeo di swanetšego go thekgwa ka ditšhelete ke Diinstitute tša Taolo ya Meetse bjalo ka TCTA le di-WUAs. Ge e le gore ditshenyagalelo tša tšhomišo ya meetse di fase kudu, di tlile go hlola peeletšo ya ka fase ga tekanyo ya, tšhomišo ya go feta tekanyo le dithušo tša tšhelete ya mmušo tšeo di sa nyakegego. Ka gona go na le tlhokego ya go beakanya go mananetefo a godimo a nnete godimo ga nako go thuša ditshenyagalelo tša go beeletša bogolong bja kabo go fihlelea dinyakwa tše di hlatlogago le go mpshafatša infrastraktšha ye e lego gona.

7.1 Mešomo ya Meetse ya Mmušo

Go ya Karolo 56 (2)(b) ya Molao wa Bosetšhaba wa Meetse, 1998, ditshenyagalelo tša tlhabollo ya methopo ya meetse e akaretša ditshenyagalelo tšeo di amanago le dinyakišišo, go beakanya moakanyetšo le kago ya dikimi tša meetse tšeo di nago le ditshenyegelo tša letlotlo tša diprotšeke. Leano le le boeleditšwego le šomiša phokotšegotheko, poelo go dithoto (ROA) le tebanyo ya go bea thekgo ya ditšhelete ya go bea ditefo go thekga ka ditšheleteditefo tša letlotlo go ya ka dikimi tšeo e lego tša Mmušo tša tlhabollo, mpshafatšo le kaonafatšo. Ka nako tša bjale, go filwe ditšhitišo tša ditekanyetšo go tšwa go Matlotlo a Bosetšhaba, infrastraktšha ye kgolo ya methopo ya meetse, ke ka fao

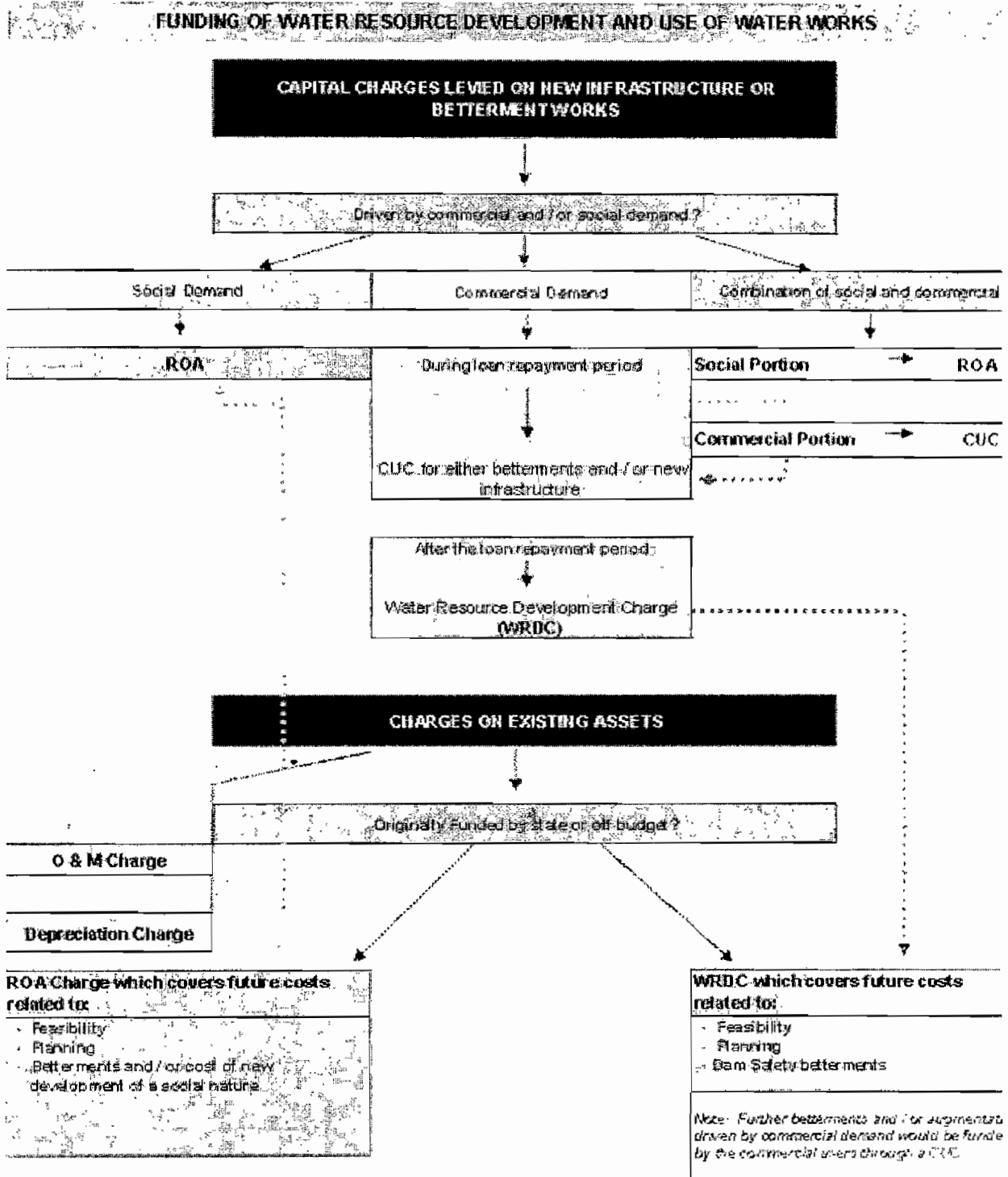
go bilego bohlokwa gore go be le thekgo ye ntshwa ya ditšhelete ka eitšensi ya Thekgoya ditšhelete le Phathagatšo ye bjalo ka TCTA. Thekgo ya ditlhabollo tša infrastrakšha e nyaka dikadimo tša ditšhelete, tšeo ka tlhago di nago le dibaka tše itšego tša go lefela tšeo di amanago le tšona nakong tšeo tshomišo ya meetse a mantši e swanetšego go lefa ditefo go ya ka tumelelano ya kontraka. Ka moso thušo ya ditšhelete ya Mmušo e tlile go šomišwa go methopo ya meetse ya leago goba diprotšeng tša go kaonafatša goba tša kaonafatšo tšeo di kwanago le mabaka, ao a dumelelanago kudu le tlhabollo ya methopo ya meetse a leago goba kaonafatšo ya diprotšeke, yeo e dumelelanago le mabaka, ao a hlagišitšwego ka gare ga Karolo 2 ya NWA, 1998 le fao nyako e sa laolwego ke bašomiši ba kgweboye itšego goba mafapha. Ditshenyagalelo tša letlotlo tšeo di amanago le tšwetšopele ya phihlelelo ya go lekalekana ya meetse, yeo e fihlelelago dinyakwa tša bjale le tša isago tsa boditšhabtšhab le kanonafatšo polokego ya matamomatamong ao a lego a Mmušo, a tla lokela thekgo ya tšhelete ya Mmušo. Tlhabollo ya infrastrakšha ye ntshwa goba kaonafatšo e ka ba le karolo ya leago gammogo le ya ekonomi moo ka go yona thekgo ya mmušo ya ditšhelete le ditefo tšeo di amanago le tšona di tlogo šomišwa karolong ya leago, mola thušo ya ditšhelete ya dikamo e tlogo šomišwa go karolo ya kgwebo.

Go ka no ba le mabaka a mangwe fao e lego gore mmušo o tlagodiša infrastrakšha ka kgolofelo ya go tlhabolla ikonomi. Mo mabakeng ao ditšhomišo tša leago di tla lefišwa go ya ka pholisi ya thekgo ya ditšhelete ya ditekanyetšo tša mmušo, mola go tlogo dira ditherišano tša tekanyo ya go lekana le thekgo ya ditšhelete le bašomiši ba ekonomi. Tlhopho ya diprotšeke (leago le kgwebo) e tla ba ka kgetho ya Tona ya Merero ya Meetse le Kagodikgwa.

Lenanetlhopo le le lego ka fase le laetša ditefelo tšeo di ka šomišetšwago infrāstrakšha yeo e thekgwago ka tšhelete ka fase ga mabaka a go fapafapana.

DITEFELO TŠEO DI SWANETŠEGO GO LEFIŠWA	DIKIMI TŠEO DI LEGO GONA	DIPROTŠEKE TŠE DISWA		
		Tšeo go ya ka Histori di bego di thekgwa ka Ditšhelete ke Sešegotlotlo sa go nagana	Tšeo di thekgilwego ka botlalo goba ka ntlha ye nngwe ke Mmušo	Tšeo mathomong di bego di thekgwa ka ditšhelete ke Mmušo gomme tša tša bušetšwa go bašomiši ba bofelo

Tšhomišo Tlhokomelo	✓ (lebelela 7.1.1)	✓ (lebelela 7.1.1)	✓ (lebelela 7.1.1)	✓ (lebelela 7.1.1)
Phokotšegotheke	✓ (lebelela 7.1.2)	✓ (lebelela 7.1.2)	X	X
Mpshafatšo	X	X	✓ (lebelela 7.1.2)	✓ (lebelela 7.1.2)
Pušetšo go	✓ (lebelela 7.1.3)	✓ (lebelela 7.1.3)	X	X
Tlhabollo ya Methopo ya Meetse	✓ (lebelela 7.1.3)	X	X	X
Kaonafatšo	X (lebelela 7.1.5)	x (lebelela 7.1.5)	✓ (lebelela 7.1.5)	✓ (lebelela 7.1.5)
Tefelo ya Yuniti ya Letlotlo	X	X	✓ (lebelela 7.1.4)	✓ (lebelela 7.1.4)



7.1.1 Ditshepedišo le Tlhokomelo

Tshepedišo le tlhokomelo e tla ba ka mokgwa wo o latelago :-

a) Ditshenyagalelopewa:

Ditshenyagalelopewa le tšeo di fapanego, tšeo di ka abjagothwii go dikimi tš taolo, tša tshepedišo goba tša tlhokomelo di akaretša :

- Dithenyagalelo tša taolo
- Ditshenyagalelo tša tshepedišo le tlhokomelo (mohl. dintshenyagalelo tša go pompa, taolo ya sekoro, bj.bj.)
- Ditshenyagalelo tša kabo

Ditshenyagalelotlengwa di tla abelwa thwii go mafapha fao go kgonagalago. Ditshenyagalelo tša mešomo ye e kopanetšwego le ditshepedišo e tla abelanwa ka mokgwa wa bontši.

b) Ditshenyagalelo tšeo e sego tša thwii:

Tšeo ke ditshenyagalelo tšeo di ka se kgonego go abelwa thwii go dikimi tše itšego, eupša di thuša taolong ya dikimi tša meetse tša tikologo ka moka, gomme di akaretša:

- Ditshenyagalelo tšeo di swanetšego go lefiwa tša ofisi ya tikologo/ditshenyagalelo tša kholo
- Ditshenyagalelo tšeo di swanetšego go lefiwa tša ofisi ya tikologo

Ditshenyagalelo tše dingwe tšeo e sego tša thwii tšeo di abetšwego dikimi di tšile go abelwa go mafapha a go fapapana ka mokgwa wa go lekana r.

Ditefo tša Tshepedišo le tša Tlhokomelo di tla humanwa ka mabaka a skimi goba tshepedišo. Ditefo tše (tšeo di akaretšago ditshenyagalelotlengwa le tša go se tlengwe) di ka thulaganywa ka ditshenyagalelo tša thulaganyo tša nnete goba ka Lenanetefo la Ditshepedišo le Tlhokomelo leo le theilwego godimo ga ponelopele ya ngwaga ka ngwaga ya O&M ya tšhomišo ya meetse.

7.1.2 Phokotšego/Mpshafatšo

Phokotšego go ya ka mo go hlalošitšwego ke phathagatso ya boleng bja kgonthe bja infrastraktšha Taolo ya Meetse bjalo ka TCTA le di-WUAs. Gee le gore ditshenyagalelo tša tšhomišo ya meetse di fase kudu, di tšile go hlola peeletšo ya ka fase ga tekanyo ya, tšhomišo ya go feta tekanyo le dithušo tša tšhelete ya mmušo tšeo di sa nyakegego. Ka gona go na le tlhokego ya go beakanya go mananetefo a godimo a nnete godimo ga nako go thuša ditshenyagalelo tša go beeletša bogolong bja kabo go fihlelela dinyakwa tše di hlatlogago le go mpshafatša infrastraktšha ye e lego gona.

Ka mabaka a go bala ditefo, phokotšegotheke ke tatelano ya kabo ya ditšhelete tšeo di fokotšegago ya thoto morago ga bophelo bja yona ba tšhomišo gomme e ka šomišwa ka mokgwa wo o latelago:-

- Mothalongthwi ka bophelo bja mošomo wa dithoto.
- Tšhelete ye e fokotšegago = karolo ya ngwaga ka ngwaga ya yeo e swanetšego go bušetšwa ya boleng bja dithoto .
- Boleng bja peobakeng = tekololeswa ya boleng bja dithoto go ya ka fao e laeditšwego Matšhe 2000 (tekololeswa ya sethekniki ya botlalo e swanetše go tšea sebaka se mengwaga ye e sa fetego ye 10). Mo mengwageng ya tsenogare, tekololeswa ya deskthopo e tlile go dirwa ka ngwaga go e ra gore PPI ya Aprele ya ngwaga wo mongwe le wo mongwe tlile go šomišwa go oketša notheo wa boleng bja infrastraktšha ya dithoto, gomme ka gona ditšhelete tša phokotšego ya theko tša ngwaga ka ngwaga, e tla ba boleng bjo bonnyane.

Dikimi di dikgatong tša go fapafapana tša phokotšego ya theko gomme go hlokagala gore di mpshafatšwe ntleheng tša go fapafapana nako le nako. Maikemišetšo ke gore ka khwetšo ya ditshenyagalelo, ditefelo tša ditshenyagalelo di tlile go šomišwa go mpshafatša dithoto tše di lego gona ka mabaka a go tla pele, ka pela ka mo go hlokagalago. Letseno la phokotšotheko go tšwa go letseno la kakaretšo le tla ba la tšhomišo ya mapshafatšo ya dithoto tša infrastraktšha go tšwa go sekhwama se se beilwego sa mshafatšo.

Ka ge mpshafatšo ye e tlile go lokiša fela boleng bja letlotlo la pele, ka mantšu a mangwe gago dikoketšo tše di tla bago gona ka baka la mpshafatšo. Mo go dikimi tšeo di tlogo thekgwa ka tšhelete ka tekanyetšo, ditshenyagalelo tša phokotšegotheke di tlile go šomišw fela morago ga ge dikadimo di lefeletšwe. Ge e le gore mpshafatšo e a nyakagala nakong ya putseletšo, dithenyagalelo tša mpshafatšo di tla beakanywa nakong tša tumelelano magareng ga batho bao ba amegago.

Ditefišo tša karolo le bophelo bjo bonago le mohola bjo thoto e tla fokotšegago di ya ka lenanetlhopho le le la ka fase, leo le amanago leo le yago ka poeletšao ya tekololeswa ye e tlogo ya dithoto.

Karolo	Karolo ye e fokotšegago (%)	Bophelo bjo bohlofelwago (mengwaga)
Matamo	10	45
Dikanale	40	45
Dithanele	10	45
Diteišene tša dipompi	40	30
Melokoloko ya	30	45
Melokoloko ya dipompi tša tšhipi	75	30
Meago	100	40

Fomula ya go bala ditshenyagalelo tša phokotšego (ADC):

ADC = boleng bja peobakeng * Karolo ya phokotšego%/bophelo bjoo bo holofelwago

Ditshenyagalelo tša phokotšego ya theko di diragala go mafapha ka moka ao a abelwafo ke Mmušo mešomo ya meetse.

7.1.3 Poelo go dithoto (ROA)

Karolo ye ya ditefišo e laetša ditefo tšeo di yago go tlhabollo le kaonafatšo ya boleng bja letlotlo bja mešomo ya dikiming tša meetse a mmušo. Di tlile go laetšwa ka go se fetošo tefelo go humana tekanyo tše itšego tša poelo go boleng bja bjale bja peobakeng ya infrastrakšha.

ROA e theilwe godimo ga theko ya mabaka a leago is ya letlotlo la mmušo gomme e swanetše go latelwa ka boemo bjo bolekanego ditshenyagalelo tša sekhwama sa ngwaga ka ngwaga sa dinyakwa tša ditekanyetšo bakeng sa tlhabollo ya mešomo ye meswa ya meetse ya leago le kaonafatšo ya infrastrakšha ye e lego gona.

Ka kakanyo ya peakanyo ya thekgoya ditšhelete diprotšekeng tše dingwe, maemo a tekanyo ya letseno leo le swanetšego go hlagišwa ka ditefo tša ROA e lebantšwe go go hwetšeng ga dithenyagalelo tša letlotlo tšeo bakeng sa diprtšeke tša go thekgwa ke Mmušo ka ditšhelete.

Nyakišišo ya diprotšeke tše di swa tša leago e lebeletšwe go ya ka Leano la Bosetšhaba la Methopo ya Meetse gomme letlotlo leo le nyakegago la go thekga ka ditšhelete kaonafatšo ya polokego ya letamo, e utullotše gore tekano ya ROA ya 4% yeo e beilwego go ya ka Leano la Go bea theko la 1999 gomme le bego le theilwe godimo ga tekanyo ya kgolo ya dinyakwa tša ka gae ka nako ye, e ka se kgone go beakanyetšwa fase ntle le go ama kudu nako ya lenaneo la phethagatšo. Go dira gore hlokomela dinyakwa tša tše di holofetšego tša dinyakwa tša lebaka la gare ya letlotlo leo le swanetšego go thekgwa ka ditšhelete go ya ka ditseno, ka gona ROA e tla tšwela pele laetšwa ke skimi goba bamaka ao a amanago le tshapedišo ka go šomiša tekanyo ya 4% dithsenyagalelong tšea go fetša thekgo ya tšhelete ya Mmušo ya infrastraktšha ye ntshwa goba boleng bja phokotšegotheke goba go šomiša bakneg ditshenyagalelo tša tša infrastraktšha yeo e lego gona. Boleng bja peobakeng le bja phokotšegotheke bo tla thewa godimo ga tekanyo ya boentšinere yeo e bego e feditšwe la mathomo ka Matšhe 2000, gore e tle e boeletšwe ka gare ga dikgala tše tša mengwaga ye 10. Gare ga ditekanyo tša boentšinere, boleng bja thoto ya mengwaga ye e fetilego e tlile go oketšwa ka PPI ya Aprele ngwaga wo mongwe le wo mongwe go laetsa boleng bja bjoo bo bja bonnyane bja ditshenyagalelo tša letlotlo ka mabaka a go gea theko. Se se dirwa go hlokomela boleng bjo bo fokotšegago bja RAO nako le nako ka mantsu a amangwe ka baka la phokotšegotheke gape le go netefatša gore

boleng bja dithoto go ya le nako bo tla laetša boleng bja peobakeng bja nnete gr go dira tekolo ya theknikhale.

Ditefo tša ROA di šoma dithotong tša Mmušo le tšeo di thekgago ke mmušo ka ditšhelete ntle le ge e le gore di di gona le gore di maemong ao a šomago. Go dikimi tša go feta tekanyetšo, tefeo ya ROA e ka se gapeletšwenakong tša sebaka sa tefelo ya kadimo go thibela ditefo tša godimo kudu go bašomiši ba meetse.

Molao wa bosetšhaba wa Meetse o dumelela poelo go dithoto, ke maikemišetšo a gore ditseno tša di tla šoma go tlhabollo le kaonafatšo ya diprotšeke tša letotlo dikiming tša meetse tša mmušo. Ka ge ditefo tša di sa šome go dikimi tša go feta tekanyetšo mola kadimo e sa lefiwa, go na le kgonagalo ya gore go be le tlhaelo ya thekgo ya ditšhelete bakeng sa ditlhabollo tša išago le kaonafatšo ya dikimi tša thekgo ya go feta ka ditšhelete. Bjale ka ge go boletšwe karolo 7.1.8 yeo e bolelago ka go šoma ga dikwanma tša resefe, ditseno tšeo di akareditšwego tša ROA di tlile go šomišwaka mabaka a go tla pele go fihlelela ditshenyagalelo tša peakanyo le kgonagalo ya tlaleletšo ya išago le kaonafatšo ya GWAS ye e lego gona le tlhabollo ya diprotšeke tša leago. Mošomiši yoo a filwego laesense gomme a lefišeditšwe kabo go tšwa go dikimi tša tlaleletšo ya tekanyetšo ka gona o tla holega ka nako ye e tlogo go tšwa go akhaonto ye e beetšwego ya RAO. Ka gona go tlile go ba bohlokwa gore bašomiši ba ba tšwele pele tlišong ya akhaonto ka ditheko tša mošomiši.

Go ya ka Karolo 56 (2) (b) ya NWA, DWAF ka gare ga ditokelo tša yona e tlakgoboketša sekhwama sa bašomiši ba meetse bakeng sa tlhabollo ya methopopo ya meetse le tšhomišo ya mešomo ya meetse, go akaretša-

- (i) Ditshenyagalelo tša dinyakišišo le peakanyo;
- (ii) Ditshenyagalelo tša kago; le
- (iii) Thekgo ya tšhelete ya tlhabollo

**Ya infrastraktšha ye ntshwa go ya ka karolo 56 (2) (c) go bea ditefo tša go fihlelea kabo ye e lekanago ya go ba le bokgoni ya meetse, yeo e tlogo laetša boleng bja tlhokego ya meetse.

Dielemente tše di tla bopa **Ditefo tša Tlhabollo ya Methopo ya Meetse (WRDC)** yeo e swanetšego go lefišwa go dikimi tša tekanyetšo ya feta tekanyo morago ga ge kadimo dikiming tse bjao e lefelelwe. Go swana le dikimi tša go thekgwa ke Mmušo ka ditšhelete, tefelo e tla laetšwa ke go hwetša moputso wa tekanyo ye itšego go dipoelo tša boleng bja thoto bja DWAF, ka mabaka a go bea theko ya skimi seo se lefetšwego ka botlalo gomme se tla ba gona ge felaskimi se bjalo se šoma le/goba bašomiši ba maleba ba meetse ba na le laesense. Boleng bja dithoto bo tla ya ka tekanyo ya boentšinare nakong ya ge kadimo e lefeletšwe.

Go tlile go hlokoelwa gore batho ba bašomiši ba bangwe ba feditše go fela kadimo ya bona yeo e amanago le dikimi tše. Go bašomiši ba meetse bao ba nago le laesense bao ba lebanego ke thušo ya ditšhelete ya tekanyetšo ya go fetišiša, tekanyo ya tefišo ya WRDC ye e tla laetšwa ke Tona ya Merero ya Meetse le Kagodikgwa ka nako tšeo a e thomago go šoma ka yona (ka morago ga gore dikadimo dilefelwe) gomme etla šoma diking ka moka tše bjalo. Bjalo ka molao, ditekanyo tše di tla ba ka fase ka tekanyo ya ROA go dikimi tšeo di thekgwago ke Mmušo ka ditšhelete. Go bašomiši ba bangwe ba meetse bao ba hunego laesense ka morago ga gore sekoloto sa tekanyetšo se lefelwe, tefelo ya roa ka botklalo e tla šomišwa.

Tefo ya ROA e šoma go mafapha ao a abelwago go tšwa go mešomo ya mmušo ya meetse:

- Mmušoselegae (ya legae)
- Intasteri
- Meepo
- Maano (Enetši)
- Temo - go dikimi tše diswa feela

Bakeng sa lefapha la Temo, ROA lefiša go ya ka Maano a go bea theko a 1999 a swanetše go šomišwa go balemi bao ba hlokago methopo go dikimi tšeo di lego gona le dikimi tše di swa tšeo di hlomilwego bjalo ka karolo ya lenaneo la Mphafatšo ya Kabo ya Meetse. Le ge go le bjalo, ROA e tla šoma go dikimi tša mmušo tšeo di hlomilwego bakeng sa balemi ba kgwebo.

7.1.4 Dikimi tša mmušo tšeo di thekgilwego ka tšhelete ya ditekanyetšo

Diinstitute tša Taolo ya Meetse tše bjalo ka TCTA, tšeo di laolwago ke Tona ya Merero ya Meetse le Kagodikgwa go phethagatša le go athekgga ka ditšhelete dikimi tša ditekanyetšo, di dumeletšwe ke NWA ya go hwetša dikadimo tša ditšhelete tša tlhabollo ya infrastraktšha ya methopo ye meswa ya meetse., gomme ka lebaka leo di swanetše go kgona go direla dikadimo tše ka go hwetša ditshenyagalelo. TCTA e tlile go kopanywa le Eitšensi ya Bosetšhaba ya Infrastraktšha ya Mešomoya Meetse (NWRIA), yeo e tla rwalago maikarabelo a gotlhabolla tshepedišo ya Afrika Borwa ya Bosetšhaba ya infrastraktšha ya tšhomišo ya meetse. NWRIA e dumeletšwe ke Kabinete gomme e hlamilwe ka Molao wa yona Palamenteng. TCTA goba NWRIA ya išago ka ditherišano le bakgathatema ba yona ka protšeke ka protšeke e tlile go laetša maemo a ditefelo go ya ka fao a laeditšwego ke mokgwa wo o šišintšwego wa ditšhelete. Tefelo ye kgolo e tlile go ba Tefelo ya Yuniti ya Letlotlo (CUC).

Lebakanyana bele tlhagišoya MWRIA, TCTA e ka tsena tumelelanong le before establishment wathe NWRIA, the TCTA le Kgoro ya Merero ya Meetse le Kagodikgwa ("DWAFF") gomme le DWAFF ka morago e ka tsena tumelelanong ya kabo ya meetse le bašomiši ba bofelo. Ka baka leo ditumelelano tšeo e tla ba tša tša go tšwela pele gomme tša dira lebaka la go rekhota goba go ngwala

ditokelo le ditshwanelo tša bakgatha tema bao ba phethagatšago, go thuša ka ditšhelete, le kabo ya meetse ya mošomo omoswa wa mmušo wa meetse. Mo mabakeng ao, TCTA etlile go lefiša CUC go DWAF gomme DWAF ka go le lengwe e tlile go lefiša CUC go bašomiši ba bofelo. Go ka saenwa tumelano magareng ga bakgathatema fao ditefo tša CUC di lefelwagi thwii insitušeneg ya taolo ya meetse.

Mo maemong a, ge sekoloto sa protšeke se lefeletšwe, protšeke e tlile go goga ditefo ka moka tšeo di šomago go dikimi tšeo di thekgago ke Mmušo ka ditšhelete ntle le ditefelo tša ROA, tšeo di tla emelwago ke WRDC go ya ka mo go hlalošitšwego ka godimo.

Dithlahli tša CUC

- Lenanetefo leo le tlile go netefatša gore sekoloto mo protšekeng se tlile go lefelwa ka botlalo ke mošomiši wa bofelo ka nako ye e kwagalago. Nkaoye e kwagalago gantši e laetšwa e le magareng ga mengwaga ye 18 le 25, go hlokometswe go kgona go lefa le tlaleletšo ya skimi.
- Nako ye e kwagalago ya go lefa sekoloto, yeo e ka se bego ya go feta bophelo bja ekonomi ya thoto, gomme e tla laetšwa ka mabaka a :
 - Profaele ya sekoloto le kgolo ye e dumeletswego ya maemo a sekoloto sa protšeke;
 - Go se dumelel sekoloto sa protšeke go fetela go protseke ye nngwe, go ka hloago mathata a ditšhelete go mošomiši wa bofelo goba go se lekane ga ditšhelete lefapheng la meetse le
 - Dinyakwa tša thekgo ya ditšhelete ye e letešwego ya išago.
- Tefo e balwa ka mokgwa woo e lego gore ga e fetoge ka nšete gomme e gola le infleišene, e lego CPIX, ntle le ge go dumeletšwe ka mokgwa wo mongwe ke bakgathatema goba taetšo ya tshekatsheko e le gona.
- Tefo e ka tsenywa kanong tša kago.
- Bakgathatema ba swanetše go leka gore ba se godiše tswala ka morago ga go fetša go aga. Mabaka ao tswala e oketšwago ka wona a tlile go akaretšwa go ya ka kontraka ya pele ya tlamo, goba go sego bjalo tumelano ya tlaleletšo, yeo go dumelelanwego ka yona ka basaeni ka inoka kontrakeng ya pele .
- Tefo e tla ya ka tšhomišo ya meetse go tšwa go skimi goba tshepedišo gomme e sego meetse ao abilwego go tšwa go skimi goba yeo e tlogo kgonagatša taolo ya dinyakwa tša meetse, dithibelo tša

meetse, bj.bj.

- Go thoma le go fokotša ga tefo go ka dumelwa ge e le gore go nolofatša go kgona ga mošomiši, tlhagišo ya koketšo ya išago le yona e tla hlokomelwa.
- Ponelopele ya dinyakwa e šomišetšwa go laetša tefo yeo e sekasekwago ka ngwaga go lebeletšwe diphetogo tša:
 - Ponelopele ya dinyakwa tša meetse;
 - Ponelopele ya tekanyo ya nnete ya tswala;
 - Ponelopele ya infleišene/goba
 - Tefo ya skimi gammogo le tefo ya go lebelela sebaka sa kokeletšo ya išago.
- Go tloga ka tšatšikgwedi la lenanetheko ditšhelete di lefa go institute, pele ga matšatši a 30, ntle le ge go dumelelanwe magareng ga bakgathatema.

Ditemošo tša Tshekatsheko tša CUC

Ditefo tša CUC go ya ka kontraka di ka sekasekwa ka ngwaga fao dikoketšo di tlogo fetiša ka go itiriša goba ka fase ga mabaka a itšego ao go rerišanwego ka wona ke bakgathatema. Mabaka a a hlokometše eupša ga a kgaoletšwa go:

- tšhelete Diphetogo tša tshepedišo ya thušo ya
- maekroekonomi; Diphetogo tša ponelopele ya
- Diphetogo tša diphetogo tša theramolao;
- Diphetogo tša ditshenyagalelo tša kago;
- Letseno le lengwe le le lengwe leo le hlagišitšwego ke skimi ntle le CUC gomme se dumeletšwe ke bakgathatema go fokotša tšhelete ye e šaletšego morago ya go lefa skimi;
- Diphetogo go kabo ya tšhomišo ya meetse le kgapeletšo ya go ba le laesense le
- Kelo ya nako ya dikimi tša išago.

7.1.5 Dikaonafatšo

Kaonafatšo e ra kaonafatšo ya infrastraktšha yeo e lego gona ya methopo ya meetse yeo e tšwago go phathagatšo yeo e šomago le/goba boleng bja kgonthe bja letlotlo leo. Mehlala e tšwa go letamo leo le lego gona go oketša tšweletšo, kokeletšo ya kanale go oketša bogolo le kaonafatšo ya tiišetšo ya matamo ka mabaka a polokego.

Kaonafatšo ya diprotšeke tša leago e tla thekgwa ka ditšhelete ka tlhagišo ya ROA. Ka morago ga gore kaonafatšo e hlagišwa, boleng bja kgonthe bja thoto bo tla oketšega, gomme seo se tla hlola koketšo ya tšhelete ya RAO bakeng sa go sea theko.

Mabapi le kaonafatšo ya diprotšeke tšeo di laolwago ke kgwebo ka go šomiša tekanyetšo ya tlaleletšo, Tona ya Merero ya Meetse le Kagodikgwa goba institute ya taolo ya meetse e ka lefiša tefo ya kaonafatšo ka ditherišano le mošomiši wa bofelo moago wa ka morago wa infrastraktšha ye ntshwa. Tefelo, ka kgetho ya mošomiši wa bofelo e ka laetšwa ke tefo ya tefelo ya nnete goba ya ka dihlokwa go nolofatša khuetšo ya tefišo ge e le gore ditshenyagalelo tša godimo di bile gona go oketša go ba gona ga meetse le go lota kabo ya tiišetšo.

Melao ye e swanago ya CUC e tla šoma go kgoboketša letseno la ditefo

7.1.6 Mekgwa ya go bea theko ya yuniti

7.1.6.1 Tiišetšo ya Kabo (Karolo 56 (4)(b)(iii) ya Molao)

Tefo ya letlotlo la matamo a go šomišetšwa mabaka ka moka e tlile go arolwa ka mafapha a mabedi go lekana le palogare ye lekantšwego ya lebaka le letelele ya mafapha ya kabo ya tšhomišo ya ngwaga ka ngwaga. Palogare ya tšhomišo e tlile go laetša thibelo ya nakong tša thibelo ya meetse, ka gona e hlokomela tiišetšo ya kabo. ROA le le ditefo tša phokotšegotheke ka lefapha ka gona e tla laetšwa ka go šomiša dikabo tša ditefo tša letlotlo tše di arogantšwego.

Ntle le ge tiišetšo ya kabo ya tlhokomelo ya kabo e le gona, palogare ya tšhomišo ya ka ngwaga ya mafapha a go fapafapana e tla hlokomelwa go dipresente tše di latelago tša kabo dikiming tša meetse tša Mmušo:

Lefapha	% ya Kabo ya mafapha	Kabo ya palelo %
Lefapha la nošetšo	91%	(100%@70%+70%@30% ya nako)
Ya legae, ya intasteri meepo	97%	(100%@70%+90%@30%ya nako)
Lefapha le intasteri	100%	Ga go na mapheko a meetse

- Mo mabakeng a phetišetšo ya kago, karolo ya ditshenyagalelo tša letlotlo e tlo dirwa ka karolo ye e hlokalalago ya tekanyetšo tša kabo mafapheng a go fapafapana.
- Go ka šomišwa phesente go laetša phapano ya theko ditefong tša CUC go ya ka Kabo ya Tiišetšo.

Tiisetšo ya kabo e šongwa ka mokgwa wo o latelago:-

- Ge e le gore mohlala skimi se na le 100 million m³ ya meetse e yeo e lego gona ka ngwaga:
- Ge e le gore 30% is e abetšwe go ya legae le ya intasteri, (30 million m³) gomme mašaledi a 70% a abelwa go temo, gona palogare ya tšhomišo ya dikabo e tla humanwa ka mokgwa wo o latelago:-

Ya legae & Intasteri	30 million m ³ × 0,97	29.1 million m ³
Nošetšo	70 million m ³ × 0,91	<u>63,7 million m³</u>
Palomoka		<u>92,8 million m³</u>
Kabo ditshenyagalelo tša legae le tša Intasteri e tla ba	29,1 / 92,8	31.36%
Kabo ya Nošetšo e tla ba	63,7 / 92,8	<u>68,64%</u>
Palomoka ya ditshenyagalelo tša kabo	<u>100 %</u>	

Ka fase ga mohlala wa bjale, go šomišetšwa legae le ya intasteri di tšile go lefelela tefo ya 1.36% ka baka la tiisetšo ye kgolo mola Nošetšo e tla amogelago phokoletšo ya 1.36% ka baka la kabo ye nnyane ya tiisetšo.

7.1.6.2 Ditefelo tša tšhomišo mo diprotšekeng tša leago

Tefo ya yuniti e emela ditshenyagalelo tša tšhomišo tšeo di swanetšego go lefišwa dikimeng tša leago tšeo di lego gona le tše di swa goba (Tša go thekgwa ke Mmušo ka ditšhelete). Tefelo ya yuniti e tla laetšwa go ya ka dikabo tša yuniti tša ngwaga ka ngwaga go ya ka ROA (ge go le bjalo), Phokotšegotheke Tshepedišo le Tlhokomelo.

Tefelo ya Yuniti e tla thewa godimo ga tšhomišo ya meetse ye e beakantšwego eupša ditefo tša tšhomišo di tla ba go ya ka tekanyo ya lenanetefo ka tšhomišo ya nnete goba ye e ngwadišitšwego.

Mo go diprotšeke tša leago, fao tšweletšo ya matamo e sego ya abelwa ka botlalo, ditefo tša tšhomišo di tla ya ka tswala ya lebaka le le telele, e lego thušo ya tšhelete ya Mmušo.

Mo go dikanale goba dielemente tša molokoloko wa diprotšeke tša leago tšeo di sa šomišwego ka baka la gore tšhomišo ka botlalo go ya ka mo go beakantšwego ka gona ga e a phathagala, boteng bja kanale/molokoloko wa phaephe o swanetše go šomišwa bjalo ka motheo wa go humana ditefelo.

Ntle le ge go dirilwe dipeakanyo tše dingwe tšeo di dumeletšwego ke DWAF, ditefelo tša tšhomišo di tlile go lefišwa ka kgwedi bakeng sa mafapha a ka gae/intasteri le gabedi ka kgwedi bakeng sa mafapha a temo

Go tšwetšapele pabalelo ya meetse le taolo ya dinyakwa, ditefelo tša tšhomišo di swanetše go ba le ditefelo tšeo di sa fetogego le ditefelo tša go fetoga moo go nago le ditumelelano le mekgatlo ya tšhomišo.

7.1.7 Go tsenywa ga ditefelo tša tšhomišo

- Lefapha la legae/la intasteri/la meepo/la enetši

Dikoketšo tša ngwaga ka ngwaga tša dikimi tšeo di thekgwago ka tšhelete ke mmušo le tla kgaoletšwa go 10%+ PPI (tekanyo e tšerwe ka Aprele) go fihlela go fihlelelwa ditefo tša tefelo. Nakong tša go sebaka sa go tšweletša, ditefo di ka se fokotšwe ka fase ga maemo a ngwaga ntle le ge go na le mabaka a go feta tekanyo, ao a ka dirago gore phokoletšo e se phethagale.

- Lefapha la temo

• Balemi bao ba dumeletšwego

- (a) Ditefelo tša Tshepedišo le Tlhokomelo di tla humanwa ngwaga ka ngwaga, ka koketšo ya ngwaga ka ngwaga yeo e kgaoletšwego go 50%.
- (b) Ditefelo tša dikimi tše di lego gona di tlile go kgaoletšwa go disente tše 1.5 ka metera³ le PPI (tekanyo) 2007/08 bjalo ka ngwaga wa motheo.
- (c) Ditefelo ka botlalo tšeo di tlogo hwetšwa (go akaretša ROA) bakeng sa dikimi tše di swa.

• Methopo ya balemi bao ba sokolago

- (a) Ditefelo tša tshepedišo le tlhokomelo di tlile go tlošwa morago ga mengwaga ye mehlano go thoma ka tšatšikgwedi la boingwadišo la tšhomišo ya maleba ya meetse.
- (b) Ditefelo tša phokotšego ya theko di tlile go hlokomologa mengwaga ye mehlano go tloga ka tšatšikgwedi la boingwadišo la tšhomišo ya meetse. Ka morago ga fao ditefelo di tlile go kgaoletšwa go disente tše 1.5 ka dimetera³ le PPI (tekanyo) ka 2007/08 bjalo ka ngwaga wa motheo.
- (c) Tefo ya letlotlo la tlhabollo ye ntshwa e tla hlokomelwa nakong ye e kgaoletšwego ka kgopelo ya Dikgoro tša maleba, mohlala fao e lego gore mananeo a mpshafatšo ya temo a a šomišwa.

- (d) Ditefo tše dingwe tša go hlokomologa di tla hlokomelwa ka nako ye e kgaoletšwego ka kgopelo ya Dikgoro tše di amegago, mohlala, fao e lego gore mananeo mpshafatšo ya temo a a šomišwa

- di-WUAs bjalo ka dikemedi tša go bea theko

Ge bogolo bja di-WUAs bo tšwela pele, di ka šomišwa bjalo ka dikemedi tša go bea theko tša ditefelo tša meetse. Go bea nako ya maikarebelo a phethišetšo a tla ba go ya ka tekolo ya Kgoro ya Merero ya Meetse le Kagodikgwa.

7.1.8 Tlhokomelo ya Dikhwama tša Resefe

Phokotšetheko dithotong le Ditshenyagalelo tša Tlhabollo ya Methopo ya Meetse (WRDC) di tla hlola dikhwama tša resefe tšeo di laowago ke DWAF / NWRIA nako le nako.

DWAF / NWRIA e tla ba maemong a go thuša ka ditšhelete dinyakwa tša ditshenyagalelo tša letlotlo bakeng sa mpshafatšo ya dikimi tše itšego go tšwa go motheo wa yona wa distend tša tefelo ya phokotšegotheke ya kakaretšo le go thuša tlhabollo ya diprotšeke tše di swa tša leago le kaonafatšo ya diprotšeke tše di lego gona ka ditšhelete go tšwa go motheo wa ditseno tša kakaretšo tša ROA le WRDC ge sekhwama se ineešego sa poloko se šetše se šoma, fao e lego gore ditshenyagalelo tša letlotlo di tla laolwago ka gona gabotse.

Ge dibopego tše tša ka godimo di thomile go šoma, ditseno tša tefelo ya phokotšegotheke di ka šoma bjalo ka poloko ya mpshafatšo mola letseno la ROA le la WRDC le tlogo šoma bjalo ka poloko ya tlhagišo ya diprotšeke tša kaonafatšo le tlhabollo ya leago gomme e ka šomišetšwa gape le go kaonafatšo ya polokego ya matamo dikiming tšeo di lego gona .

Tšhomišo dikhwama tša phokotšegotheke e tla pele go ya ka ditshepedišo tša taolo ye e kopantšwego ya dikotsi tša methopo ya meetse tša DWAF/NWRIA.

Bjalo ka ge go boletšwe, ge tlhagišo ya akhaonto ye kopantšwego ya ROA le WRDC di šetše di hlagišitšwe, ditseno tše di tla šomišwa go thekga ka ditšhelete tlhabollo ya methopo ya meetse yeo e below bja yona bo lego ka mokgwa wo o latelago:

- (i) Peakanyo le kgonego ya koketšo bakeng sa nako ye e tlogo (diprotšeke tša leago goba tša kgwebo),
- (ii) Kaonafatšo/tlhabollo ya diprotšeke tša leago.
- (iii) Kaonafatšo ya polokego ya matamo dikiming tšeo di lego gona betterments on existing schemes (leago goba kgwebo).

Ditshenyagalelo tše dingwe tše bjalo ka tšeo di hlokwago ke dikgapeletšo tša boditšhabatšhaba di tla thekgwa ka ditšhelete go tšwa go Ramatlotlo wa naga .

Pele e tšwetšapele diprotšeke tša yona tše di swa tša infrastraktšha, DWAF e tla lekola katlego ya go thoma polokego ya meetse le go nyaka taolo ya protšeke bjalo ka kgopolo ye nngwe ya go dira tšhelete go hlama diprotšeke tša infrastraktšha tša meetse tše di swa.

7.1.9 Ditumelelano tša Kabo ya Meetse

DWAF/NWRIA e tla tsena ditumelelanong tša kabo ya meetse le bašomiši ba meetse a mantši ao a sa hlwekišwago, gammogo le makgotla a meetse, ao a swanetšego go tsena ditumelelanong tša lebaka le le telele tša kabo ya meetse le bommasepala.

7.2 Dikimi tšeo e lego tša di-CMA's le di-WUA's

Dieitšensi tša taolo ya khetšhment le mekgatlo ya go šomiša meetse, ge ba laetša dinyakwa tša ditseno tša ka fao ditefelo tša tšhomišo ya meetse a tlhabollo le tšhomišo ya mešomo ya meetse e theilwego ka gona, ba swanetše go hlokomela tše di latelago:

- (a) Poelo ya ditshenyagalelo tša ka mehla/ditshenyagalelo tša taolo, tshepedišo le tlhokomelo;
- (b) Poelo ya wa ditshenyagalelo tša letlotlo le tekolo ya dikadimo tša ditšhelete (diinstitute tša taolo ya meetse tšeo di loketšwego go ya ka Molao go oketša dikadimo go thuša infrastraktšha ye ntshwa ya kabo ya meetse ka ditšhelete, gomme ka gona tša kgona go rulaganya dikadimo tše ka mokgwa wa poelo ya ditefelo);
- (c) Tlhagišo ye e kwagalago ya phokotšegotheke ya dithoto, yeo e ka bewago sekhwameng sa resefe gore e šomišwe mpshafatšo ka nako ya maleba;
- (d) Ditefo tše ditšhelete tšeo di lefišwago ke molao go diinstitute go ya ka maano a go bea theko; le
- (e) Ditebanyo tša ditšhelete mo go leano la yona la kgwebo e.

Ditefelo tšeo di lefišwago ke Diinstitute tša Taolo ya Meetse ke ka lefišwa ka go lekana goba ka go fapana, go ya ka molaotheo wa maleba, gob age go laeditšwe bjalo ke Tona go fa ditlhagišo malebana le go fa thušo ya ditšhelete go ya ka MAW.

8. DITEFELO TŠA EKONOMI (S56 (2) (c))

Ditefelo tša Ekonomi di thekga ditebano tša ekonomi bjalo ka ge di akareditšwe ka go karolo 3 ka go fa ditšhušumetšo go tloša tšhomišo ya meetse go tloga go boleng bja fase go ya go boleng bja godimo. Ditefo tša Ekonomi di ka bewa ke

DWAF, mo skiming goba dipeakanyong tšeo di amanago le ditseno tšeo di hlatlogelago go Matlotlo.

Go na le mekgwa ye meraro ya go bea tefelo, k.g.r.:-

- ka taolo ka go laetša peobakeng bakeng sa boleng bja ekonomi ya meetse, goba
- ka mekgwa yeo e lebanego le mebaraka.

- **Mekgwa ya Taolo**

Tefelo yeo e laetšwago ka taolo, e ka šomišwa dikhetšmenteng tša meetse go fa bašomiši bao ba lego gona tšhušumetšo go oketša bokgoni bja ekonomi. Tefelo yeo e laetšwago ka taolo e tlile go thewa godimo sebaka sa tefo ya meetse bjalo ka ge e laeditšwe go ya ka fao go laeditšwego ke ditheransekšene tša kgwebo tšeo di tlogo fetišetšwa go maemo a dipušetšo tša ditefo tša thoto skiming goba tshepedišong ya maleba. Se se ra gore ke bašomiši ba meetse fela bao bas a lefišego ROA goba CUC bao ba tla šomišago mokgwa wo wa tefo.

Ka ge maano a go bea theko a hlagišitšwe, ditefo tša ditšhelete di tlile go tšwela pele go kaonafatša kabo ya meetse ka bokgoni, tefo yeo e laolwago ka ekonomi e ka se hlagišwe pele laesense ya kgapeletšo e phathagatšwa, ka morago e tla ba ditherišano le bakgathatema ba maleba le diinstitute tša taolo. Tefelo ye ya ngwaga ka ngwaga e tla ba tlaleletšo ya tefelo ye nngwe le ye nngwe yeo e lefišwago bakeng sa taolo ya methopo ya meetse, phokotšegotheke le tšhomišo ya mešomo ya meetse.

- **Mekgwa yeo e lebanego le mebaraka**

Fao e lego gore boleng bja meetse bo sa le gona bakeng sa kabo ka morago ga gore go fiwe laesense ya kgaoletšo, gomme go na le phadišano ya go šomiša meetse a, go ka latelwa tshepedišo ya fantisi ya bosetšhaba. Theko yeo e hlagišwago ka mokgwa wo e tla ba e theilwe godimo ga motheo wa tokollo ya mebaraka ka go dumelela gore bao ba dirilego dikgopelo ba šomiše tshepedišo goba mokgwa wa go thentara. Pele gohlagišwa tshepedišo ye, go swanetše go hlagišwe molawana go ya ka karolo 26(1)(n) ya NWA.

Mokgwa wo mongwe wa go sepelelana le mebaraka, o o šetšego o šoma, ke wa phetisetšo ya mešomo ya meeste ka ditheransekšene go ya ka Karolo 25(2) ya NWA. Tlhahli ya tshepedišo e hlagišitšwe go nolofatša kgwebo ka gare le gareng ga mafapha a tšhomišo ya meetse. Se se nolofatša bohlokwa bja go bea ditefo tša ekonomi ka mogwa wa taolo dikhetšmenteng tšeo di nago le kgatelelo ya meetse.

9. PEAKANYO YA DITEFELO TŠA GO NTŠHA DITŠHILA

Nakong tša tshepedišo ya ditherišano tša maano a go bea theko a tokumente ye bakgathatema ba bile le sebaka sa go dira ditshwayotshwayo ka botlalo mo dikarolong tša maano a go bea theko ao a šomago ka Tshepedišo ya Tahlo ya Ditšhila (WDCS), e akaretšago:

- Motheo wa Tshepedišo ya Tahlo ya Ditšhila,
- Tefelo ya tšhušumetšo, le
- Tefelo ya phokotšo

WDCS e tla akaretšwa ka koketšong ya maano a peo ya theko ka morago ga gore Diphetogo go NWA di dumelelwe ke Palamente.

Morago ga ge Diphetogo di dumeletšwem ga go san a ditherišano tšeo di tla bago gona bjalo ka tshepedišo ya ditherišano e diragetše ge leano le le be le tsenywa ka Kuranteng ya Mmušo bakeng sa ditshwayotshwayo tša setšhab ka 1 Julae 2005, ka fase ga Tsebišo ya 1045 ya 2005, Kuranta ya Mmušo ya 27732.

10. TIRIŠO YA MAANO A THEKO MAGORONG A GO FAPAFAPANA A TŠHOMIŠO YA MEETSE/MAFAPHA A BAŠOMI

Karolo 56 ya Molao wa Bosetšhaba wa Meetse, 1998 gape e hlagiša e maano a go bea theko go fa phapano ya go se lekalekane go ya ka-

- Mehuta ya go fapana ya tikologo ya tseokrafi (S 56 (3) (a) (i))
- Mafapha a go fapana a tšhomišo ya meetse (S 56 (3) (a) (ii)); and
- Bašomiši ba go fapafapana ba beetse (S 56 (3) (a) (iii)).

Karolo 56 (6) (c) ya Molao e hlagiša gore mo go beeng theko ya ditefo tša tšhomišo ya meetse, Tona o swanetše go hlokomela magato a bohlokwa a go thekga tlhagišo ya mananetefo ke balaodi ba ditirelo tša meetse go ya ka karolo 10 ya Molao wa Ditirelo tša Meetse, 1997 le tšhomišo ya mothalophelo le mananetefo a go thubelo.

Go ya ka maano a go bea theko ya tšhomišo ya meetse ao a sa hlwekišwago, dinyakwa tše tša ka godimo di ka se phethagatšwe ka go fana ka dinyakwa tša meetse ao a sa hlwekišwago bakeng sa go hlokwa ke batho (dihlalošwago bjalo ka dinyakwa tša go nwa, peakanyo ya dijo, le maphelo a motho tšeo di beilwegobjalo ka dilitara tše 25 ka letšatši) ntle le tefo go balaodi ba ditirelo tša meetse, eupsa ka Dithušo tša Kabelano ya Go Lekalekana go ya ka molao woo o bewago ngwaga ka ngwaga e lego Molao wa Karolo ya Ditseno.

10.1 Khuetšo wmaano a theko a meetse ao a sa hlwekišwa mafapheng a fapana a bašomi

LEFAPHA	DITEFO TŠA TAOLO YA METHOPO	DITEFO TŠA TLHABOLLO YA METHOPO	TLHAGIŠO YA DITEFELO
Ya legae/Ya intasteri	<ul style="list-style-type: none"> • Khetšo ya ditshenyagalelo ka botlalo le tšhomišo yeo e amanago le tahlo ditšhila 	<ul style="list-style-type: none"> • Tekanyetšong GWS: Phokotšego ya theko; ROA: O&M • Tekanyetšo GWS: CUC, Mpahafatšo, WRD le O&M • WMI's: Khwetšo ya ditshenyagalelo ka botlalo 	<ul style="list-style-type: none"> • Ditefo tša WRM di hlagišwa ka botlalo ka morago ga boingwagišo bja tšhomišo ya meetse ka go WMA • Ditefo tšeo di amanago le tahlo ya ditšhila WRM di swanetše go phethagatšwa ka morago ga boingwadiso bja bašomiši ba ditšhila. • Koketšo ya ngwaga ka ngwaga ya tlhabollo ya e tla kgaoletšwa go PPI + 10% go fihlela ditefo tša tlhabollo di fihleletšwe GWS teo di thekgago ke mmušo ka ditšhelete.
Phokotšo ya Meela ya Meetse Mešomo <u>Balemi ba Kgwebo</u>	<p>Khwetšo ka botlalo ya ditshenyagalelo tšeo di abetšwego. Hlokomela: Ditshenyagalelo tša Tefo ya Polokego ya Matamo le Taolo ya ditefo tšeo di amanagole tlahlo ya ditšhila tšeo di sa abelwago lefapha la kagodikgwa</p>	Ga e kgonagale, ntle le ge go rerišanwa le tlhabollo ye ntshwa,	Ditefeo tša WRM di hlagišwa ka botlalo ka morago ga boingwadišo bja R10 ye e fetišitšwego ka hektara le PPI ka 2002/03 bjalo ka ngwaga wa motheo.
Mešomo ya Phokotšo ya go elela ga meela <u>Balemi ba go hloka methopo</u>	<p>Khwetšo ka botlalo ya ditshenyagalelo tšeo di abetšwego e swanetše go fihlelewa pele ya mengwaga ye 5. Hlokomela: Ditshenyagalelo tša Tefo ya Polokego ya Matamo le Taolo ya ditefo tšeo di amanagole tlahlo ya ditšhila tšeo di sa abelwago lefapha la kagodikgwa</p>	Ga e kgonagale, ntle le ge go rerišanwa kle tlhabollo ye ntshwa,	Bjalo ka godimo, eupša e thekgwa ka ditšhelete go sebaka sa mengwaga ye 5 go tloga ka tšatšikgwedi la boingwadišo. Thušo e thoma ka 100% gomme e fokotšega ka 20% ka ngwaga Ggo ditefelo tša polantasi ye e lego <= 10 dihektara.
Nošetšo <u>Balemi ba kgwebo</u>	<ul style="list-style-type: none"> • Khwetšo ka botlalo ya ditshenyagalelo tšeo di abetšwego 	<p>GWS:</p> <ul style="list-style-type: none"> • Khetšo ka botlalo le O&M go dikimi tšeo di lego gona. • Khwetšo ya ditefo 	<ul style="list-style-type: none"> • Tefo ya phokotšego ya theko ke 1.5 c/m³ le PPI go tloga ka 2007/08. • Tefelo ya WRM e

LEFAPHA	DITEFO TŠA TAOLO YA METHOPO	DITEFO TŠA TLHABOLLO YA METHOPO	TLHAGIŠO YA DITEFELO
	<ul style="list-style-type: none"> • Ditshenyagalelo tša tahlo ya ditšhila ga di šome 	<p>tša ditšhelete tša kabo ka botlalo</p> <p>WMI:</p> <ul style="list-style-type: none"> • Khwetšo ya ditefo tša ditšhelete tša kabo ka botlalo 	<p>hlagišwa ka botlalo ka morago ga boingwadišo bja homišo ya meetse ka go WMA, eupša di fetišetšwa go 1.5 c/m³ le PPI go tloga ka 2007/08.</p> <ul style="list-style-type: none"> • Ditefo tša O&M di oketšega ka 50% ka ngwaga.
<p>Nošetšo</p> <p><u>Balemi ba go hloka methopo</u></p>	<ul style="list-style-type: none"> • Bjalo ka ka godimo, eupša e tla thušwa ka ditšhelete sebaka sa mengwaga ye a 5. • Ditshenyagalelo tša tahlo ya ditšhila ga di šome 	<p>GWS:</p> <ul style="list-style-type: none"> • O&M tšeo di thušwago ka ditšhelete sebaka sa mengwaga ye a 5 dikiming tšeo di lego gona le tše diswa. • Phokotšegotheke e hlokomologa sebaka sa mengwaga ye 5 <p>di-WMIs:</p> <ul style="list-style-type: none"> • Dithušo di hwetšagala ka fase ga mabaka a itšego. 	<p>GWS:</p> <ul style="list-style-type: none"> • Ditefo tša O&M di hlagišwa mengwageng ye 5 ka morago ga boingwadišo ka 20% ka nwaga 0% ka ngwaga wa mathomo • Ditefo tša phokotšegotheke di šoma go tloga ka ngwaga wa 6 go ya pele gomme di fetišetšwa go 1.5 c/m³ le PPI go tloga ka 2007/08. • Ditefo tša WRM di hlagišitše ka mengwagaga ye 5 yka @ 20% ka ngwaga ka. 0% ka ngwaga o tee.

10.2 DIKOTSI TŠA TLHAGO

Karolo 56 (3) (e) ya Molao wa Bosetšhaba wa Meetse e dumelela Tona go fana ka ditheo tša go lekalekana tša dielemente tše dingwe tša ditefo gore di hlokomologe go ya ka bašomiši ba itšego nakong ye e itšego.

Godimo ga thekgo yeo e fiwago ka fase, kimollo ye nngwe le ye nngwe yeo e fiwago ke mmušo go dikgoro tše dingwe tša mmušo ka nako tša dikotsi tša tlhago di ka dira gore go be le ditefelo tše dingwe tša meetse .

10.2.1 Hlaga le Meetsefula

Ge go na le hlaga goba meetsefula, ge methopo ya meetse e sa šomišwe ka baka la go senywa, Tona a ka šomiša monagano wa gagwe go fa sebopego sa kimollo

go bašomiši bao ba amegilego gomme a ka gopola tše dingwe tsa tse di latelago go laetša thekgo:-

- Ka fao puno e senyagilego ka gona.
- Kimollo ka nako tšohle e tla kgaoletšwa goditefo tša nnete tša Taolo ya Tšhomišo ya Meetse.
- Ditefelo tša Taolo ya Methopo ya Meetse di ka hlokomologa ka botlalo goba e sego ka botlalo.
- Ditefo tšeo di hlokomologilego e tla ba tša nako ye e beilwego.
- Ga go dithušo tša mokgwa wa kheše tšeo di tlogo fiwa bjalo ka kimollo.

10.2..2 Dikomelelo

Nakong tša komelelo ge go le bohlokwa go mpshafatša ditshwanelo r, melao ye e latelago e tla šomišwa ge dithibelo di gapeletšwa ke Kgoro go balemi bao ba tšhepišago le bao ba tsebegago bao ba lego dikiming tša Mmušo tša Meetse

Go dikimi tšeo go nago le kabo ya kgonthe:

- go feta goba go lekana le 70% ya karolo ya nošetšo, tefelo ka botlalo e tla šoma,
- gare ga 69% le 50% ya karolo ya nošetšo, ditefelo di tla kgaoletšwa ditefelo tša WRM le ditefo tša O&M, mola ditefo tša Phokotšegotheke di tla hlokomologa
- gare ga 49% le 30% ya karolo ya nošetšo, ditefelo di tla kgaoletšwa go ditefo tša WRM le 30% ya ditefo tša O&M, go e ra gore ditefo tša Phokotšegotheke di tla hlokomologa gomme phokoletšo ya 70% e tla fiwa ditefong tša O&M,
- gare ga 29% le 0%, ya karolo ya nošetšo, ditefelo di tla kgaoletšwa ditefo tša WRM le ditefo tša O&M, go e ra gore ditefo di tla hlokomologa
- di-CMA's le di-WUA's di swanetše go ikopanya le DWAF ka mabaka a kimollo ya komelelo.

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10.2..3 Theko ya “meetse a tlaleletšo”

Pholisi e be e dumelela banošetši ba nakwana go dikimi tša Mmušo go reka “meetse a tlaleletšo” ka fase ga maemo a itšego ao a bego a thekgwa ka tšhelete ye ntši kudu gore a emišwe. Ke fela ka fase ga mabaka a a kgethegilego, moo e lego gore lephoto la phišo leo le sa holofelwago, banwošetši ba ka dumelelwa go reka meetse a kokeletšo ka godimo ga mabaka ao. Lenanetefo la meetse a bjalo a kokeletšo e tla lenanetefo la meetse ao a sa hlwekišwago a kabo ya ka ntlong le a intasteri.

10.2..4 Tswala go ditefelo tša meetse tšeo di šaletšego morago

Ditefo tšeo di šaletšego morago di tlile go ba le tswala ka tekanyetšo yeo e tla laetšwago ke Tona nako le nako.

11. GO DIRA DILO PEPENENENG LE MAIKARABELO

Ka go hlagiša maano a go bea theko, go tlile go lekwa ka mo go ka kgonagalago go laola ditefo tša taolo. Maano a a fetotšwego a go bea theko a akaretša ditheo tša go bea dilo pepeneneng, tšeo ka botšona di swanetšego go tšwetšapele taolo ya ditefelo. Go ya ka motheo wo, ditshenyagalelo tša ngwaga wo o tlogo tšeo di tlhabollwago nakong tša tshepedišo ya taolotikologon ye nngwe le ye nngwe ya taolo ya meetsedi tlile go fetisetšwa go diofisi tša tikologo ditekanyetšo gomme tša phatlalatšwa ka mokgwa wa go amogela dikhaonto go bašomiši ba meetse mathomong a ngwaga wa ditšhelete.

12. TŠATŠIKGWEDI LA PHETHAGATŠO

Maano a go bea theko a tsentšwe ka kuranteng ya Mmušo bakeng sa ditshwayotshwayo tša setšhaba ka 1 Julae 2005. Bjalo ka ge go hlokwa ke NWA, go ile gwa fiwa sebaka sa matsatši a 90 gore go dirwe ditšhwayotshwayo fao e lego gore di ile tša humanwa gomme tsa akanywa go tiišetša. Maano a go bea theko, di ile tsa tsenywa ka gare ga tokumente ya bofelo. Kgoro e rata go leboga batho gammogo le mekgatlo ka moka yeo e kgathilego tema mo go fetoleleng maano a go bea theko.

Gore re tle re phethagatše Kgaolo 6.4, yeo e šomago ka Taolo ya Methopo ya Meetse karolong yeo e bolelago ka tšhomišo ya meetse, DWAF e swanetše gore e hlaloše ka semolao ditebanyo tša boleng le go ngwadiša ditefelo tša ditšhila tshepedišong ya WARMS. Ka gona go ka se kgonagale gore phathagatša leano le ka palomoka go fihlela thekgo ye e hlokagalago e šoma. Bakeng sa ngwaga wa go bea ditheko wa 2007/8 woo o thomago ka Aprele 2007, DWAF e tlile go phethagatšail maano a maswa a go bea theko go ya ka Ditefo tša Tlhabollo le Tšhomišo ya Mešomo ya Meetse, mola ditshepedišo tše di šetšego di tla phathagatšwa ka Maano a go bea theko a 1999. Mašaledi a maano a a go bea theko a tla thma go šoma ge ditshepedišo tše di hlokagalago di thoma go ba gona bakeng sa phathagatšo ye e kgontšhago.

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KOKETŠO A**KHOMIŠENE YA DINYAKIŠIŠO TŠA MEETSE**

MOLAO WA DINYAKIŠIŠO TŠA MEETSE (Molao wabo 34 wa 1971)

TLHAGIŠO MAANO A KGOBOKETŠO A DITEFIŠE TŠA DINYAKIŠIŠO TŠA MEETSE GO YA KA KAROLO 11 YA MOLAO WA DINYAKIŠIŠO TŠA MEETSE, 1971

Nna, lindiwe Benedicta Hendricks, MP, Tona ya Merero ya Meetse le Kagodikgwa, ka tumelano le Tona ya Matlotlo, go ya ka Karolo 11 ya Molao wa Dinyakišišo tša Meetse (Molao wa 34 wa 1971), ke hlagiša maano a kgoboketšo ya ditefelo tša dinyakišišo tša meetse, go ya ka moo a tšwelelago ka go šetulo ye.

ŠETULO**MAANO A KGOBOKETŠO YA DITEFELO TŠA DINYAKIŠIŠO TŠA MEETSE****KETAPELE**

Molao wa Dinyakišišo tša Meetse (WRA), Molao wa. 34 wa 1971, of Tona maatla, ka tumelano le Kgoro ya Matlotlo o fa Tona, ka tumelano ya Kgoro ya Matlotlo, maatla, go bea mananetefo go ya ka ditefelo tša meetse ka bokaakang bjoo bo abjago, goba go dira gore a a be gobna go šomišetšwa mabaka a go fapafapana. Ditefelo di lefelwa ka sekhwameng sa bosetšhaba sa Dinyakišišo tša Meetse gomme tša šomišwa ke Khomišene ya Dinyakišišo tša Meetse (WRC) go thekga ka ditšhelete Tlhabollo le Dinyakišišo (R&D) yeo e theilwego godimo ga meetse legatong la setšhaba.


Go ya ka hitori, mananetefo ao a amanago le ditefelo tša dinyakišišo tša meetse di be di sekasekwale go beakanywa ka ngwaga, ge go hlokagala, go elwa hloko dinyakwa tša mafapha a meetse a R&D le tekanyo ya infleišene. Go be go dumeletšwe gore go thoma ka 2004, mananetefo a 2003/04 e tla ba motheo wa mengwaga ye mehlano ya go latela gomme koketšo ya ngwaga ka ngwa ya mananetefo e tla ba go ya ka tekanyo ya infleišene, ka tsebišo ya Kuranta ya Mmušo. Ditefišo gabjale di theilwe godimo ga dibolumo tša kabo ya meetse ditikologong tša naga tšeo di nosetšwago. Go ya ka WRA, Kgoro ya Merero ya Meetse le Kagodikgwa (DWAF) e gapeletšwa go kgobokanya ditefo tša dinyakišišo tša meetse legatong la WRC, ntle le ge Tona a dumelela ka tsela ye nngwe.

Ka baka la ditlhabollo tša go fapafapana, WRC e hlokagala go sekaseka setlwaedi sa bjale le go tlhabolla leano le leswa la kgoboketšo, bjalo ka ge le hlagišitšwe fa. Ditlhabollo tše kgolo tšeo di swanetšego go fetolwa di akaretša:

- Tlhagišo ya leano la go bea theko bakeng sa ditefelo tša tšhomišo ya meetse go ya kaKarolo 56(1) ya Molao wa Bosetšhaba wa Meetse (Molao wa 36 wa1998)
- Ditlhalošo tša tšhomišo ya meetse ka go Karolo 21 ya Molao wa Bosetšhaba wa Meetse
- Phethagatšo ya Molao wa Taolo ya Ditšhelete tša Mmasepala
- Ditlhabollo tša tshepedišo ya dikhomphuthara ya DWAF (SAP/WARMS) go ngwadiša le go dira dilaesense tša tšhomišo ya meetse
- Ditefo tša dipeakanyo tša tšhomišo ya meetse ka DWAF.

Le ge e le gore gago e tee ya ditlhabollo tše go boletšwego ka tšona ka godimo yeo e laetšago thwii go ditefo tša dinyakišišo tsa meetse tšeo di lefelago motšhelo go ya ka WRA, ka moka di ama kudu ditefo tša dinyakišišo tša kgoboketšo ya meetse legatong la DWAF. Tshwanelo ya DWAF ya go tšwela pele go kgoboketša ditefo tša dinyakišišo tša meetse legatong la WRC e dira gore go be bohlokwa gore go be le kamano ya leano la go bea theko la ditefo tša tšhomišo ya meetse kgahlego ya bokgoni le phathagatšo. Ka tlwaetšo se se ra gore lefelo leo le swanetšego go šomišwa ke batho ka moka le swanetše go lebelewa gomme dipeakanyo tša lenanetefo leo le swanago le swanetše go amogelwa. Le ge gole bjalo, go swanetše go hlokomelwa gore go bewa ga ditefelo tša dinyakišišo tša meetse e sa ikemetše ka nnoši diphetogeng tša ditefo tša tšhomišo ya meetse tšeo di laowago ke leano la go bea theko la NWA.

Tokumente ye e bea leano la go kopanya kgoboketšo ya ditefo tša dinyakišišo tša meetse le leano la go bea theko la ditefelo tša tšhomišo ya meetse, mola le lota tumelano le dinyakwa tsa Molao wa Dinyakišišo tša Meetse.


Lindiwe Benedicta Hendricks, MP
 Tona ya Merero ya Meetse le Kagodikgwa

LENANETLHOPHO LA DITENG

- 1 MATSENO
- 2 TAOLELO YA SEMOLAO
- 3 PHETHAGATŠO YA LEANO LA KGOBOKETŠO YA DITEFO TŠA DINYAKIŠIŠO TŠA MEETSE
 - 3.1 DITLHALOŠO TŠATŠHOMIŠO YA MEETSE
 - 3.2 LEANO LA KGOBOKETŠO LA DITEFELO TŠA DINYAKIŠIŠO TŠA MEETSE
 - 3.3 TIŠETŠO YA DITEFELO TŠA LEFAPHA LA DINYAKIŠIŠO TŠA MEETSE

4 LEŠOKOTŠO LA KGOBOKETŠO YA DITEFELO TŠA DINYAKIŠIŠO TŠA MEETSE

5 TAOLO YA DITEKANYETŠO LE MATLOTLO

DIKHUTSOFATŠO

CMA	=	Dieitšensi tša Taolo ya Meetse a pula ao a kgobokantšhitšwego
DWAF	=	Kgoro ya Merero ya Meetse le Kagodikgwa
NWA	=	Molao wa Bosetšhaba wa Meetse, 1998
WMA	=	Tikologo ya Taolo ya Meetse
WRA	=	Molao wa dinyakišišo tša meetse, 1971
WRC	=	Khomišene ya Dinyakišišo tša Meetse

1. MATSENO

Leano le la the tebanyo, mekgwa maano a phethagatšo a go bea ditefišo tša kgobokanyo ya ditefišo tša meetse tša šomišwa ke Khomišene ya Dinyakišišo tša Meetse (WRC) go thekga ka ditšhelete Tlhabollo le Dinyakišišo (R&D) yeo e theilwego godimo ga meetse legatong la setšhaba

Ye nngwe ya dinepokgolo tša leano la kgobokanyo ke go dira gore maemo a ditefo a se fetoge ka thsepedišo yeo e kgontšhago, poledišano, le tšhomišo ya ditšweletšwa tšeo di hlokagalago bakeng sa methopo ya meetse ya Afrika Borwa.

DWAF e na le tshwanelo ya go tšwela pele go kgoboketša ditefo tša dinyakišišo tša meetse legatong la WRC e dira gore go be bohlokwa gore go be le kamano ya leano la go bea theko la ditefo tša tšhomišo ya meetse kgahlego ya bokgoni le phathagatšo. Ka tlwaetšo se se ra gore lefelo leo le swanetšego go šomišwa ke batho ka moka le swanetše go lebelewa gomme dipeakanyo tša lenanetefo leo le swanago le swanetše go amogelwa.

Tokumente ye e bea leano la go kopanya kgoboketšo ya ditefo tša dinyakišišo tša meetse le leano la go bea theko la ditefelo tša tšhomišo ya meetse, mola le lota tumelelano le dinyakwa tša Molao wa Dinyakišišo tša Meetse.

2. TAOLELO YA SEMOLAO GO MAANO A GO BEA THEKO

Go ya ka Karolo 11 ya WRA, Tona ka tumelelano le Tona ya Matlotlo, nako le nako ka tšebišo ya Kuranta ya Mmušo, a ka hlagiša mananetefo a ditefelo tša dinyakišišo tša meetser ka mabaka a meetse ao a abjwago goba ao a hwetšagalago ka dintlong, ka intastering goba tšhomišo ya temo.

3. PHETHAGATŠO YA LEANO LA KGOBOKETŠO YA TSA DINYAKIŠIŠO TŠA MEETSE

3.1 Tlhalošo ya Tšhomišo ya meetse

Karolo 56 ya NWA e laela Tona go hlagiša Maano a go bea theko a ditefo bakeng sa tšhomišo ye nngwe le ye nngwe ya meetse go ya ka mo go hlalošitšwego ka go Karolo 21:

- (l) go tšea meetse go tšwa go mothopo wa meetse;
- (m) go boloka meetse

- (n) go thibela goba go fapoša moela wa tsela ya meetse;
- (o) go šoma ka mešomo ya go fokotša go elela ga meela;
- (p) go šoma ka tiro ya go laolega yeo e ka bago le khuetšo ya tshenyo methopong ya meetse;
- (q) go ntšha ditšhila goba meetse ao a nago le ditšhila ka gare ga mothopo wa meetse;
- (r) go šomiša ditšhila ka mokgwa woo di ka bago le khuetšo ya tshenyo methopong ya meetse;
- (s) go šomiša meetse ao a nago le ditšhila go tšwa go tshepedišo ye nngwe le ye nngwe ya intasteri goba ya maatla a mohlagase;
- (t) go fetošo moelo, mabopo, moela goba mekgwa ya meela ya meetse;
- (u) go tloša, go ntšha goba go šomiša meetse ao a humanwago ka fase ga mobu go tšwetšapele mošomo;
- (v) go šomiša meetse ka mabaka a boitapološo.

Ditšhomišo sa meetse tše di lego ka godimo di ka hlophiwa ka fase ga magoro a mararo ka go NWA:

Ditšhomišo tšeo di amanago le kgopolo

- Karolo 21 (a), Karolo 21 (b) le Karolo 21 (d)

Ditšhomišo tšeo di amanago le go ntšha ditšhila

- Karolo 21 (e), Karolo 21 (f), Karolo 21 (g), Karolo 21 (h) le Karolo 21 (j)

Ditšhomišo tša go se diriše

- Karolo 21 (c), Karolo 21 (e), Karolo 21 (i), Karolo 21 (j) le Karolo 21 (k)

Tšeo di tlogo pele tša maano a go bea theko a tšhomišo ya meetse go boletšwego ka tšona ka godimo, le morago ga nako di tla lefelwa meetse ao go hlalošitšwego ka wona kudu ka morago ga ditherišano le bakgathatema. Maano a šetše a beakantšwe gomme a ka fase ga tshekatsheko bakeng sa tšhomišo yeo e amango le kgopolo. Ka phethagatšo ya tsela ya tefelo ya peakanyo ya tšhela ditšhila, bontši bja tšhomišo ye e lego ka godimo e tla fefeletwa. Maano a sa tlabollwa bakeng sa tšhomišo ya boitapološo ya Karolo 21 (k), gomme a tla bopa sererwa sa phatlalatšo ya ka thoko.

3.2 Leano la Kgoboketšo ya Ditefo tša Dinyakišišo tša Meetse

Le ge e le gore WRA e dumelela kakaretšo ya magoro a bašomiši ao a lego ka godimo dihlopheng tše di nago le maikarabelo a go lefa ditefo tša dinyakišišo tša meetse, leano la kgoboketšo la ditefo tša dinyakišišo tša meetse le tla thoma ka go lebanya go tšhomišo ya sehlopha yeo gabjale (ka 2004) e thušago go ditefišo tša dinyakišišo tša meetse, mohl. Tšeo di welago ka legorong la tšhomišo yeo e amanago le kgopolo. Se se akaretša ditšhomišo tša meetse a ka mabaka a ka gae, mmasepala, intasteri le nošetšo. Le ge gole bjalo, go holofelwa gore ka ditherišano le makgotla a maleba aTMšhomišo ya meetse, tefo ya ditshenyagalelo tša tšhomišo ya meetse e tla oketšwa go

ditšhomišo tše dingwe go ya ka fao go hlalošitšwego ka go tšhomišo ya meetse.

Tefo ya ditefelo tša dinyakišišo tša meetse ditoropong, ka gae le intasteri gabjale e theilwe godimo ga bakaakang bja kabo ya meetse . Le ge go le bjalo, tabeng ya nošetšo, fao e lego gore meetse a mantši ao a abjago ga a elwa, WRA e dumelela ditefo (mananetefo) tikologong yeo (ya dihektara) go ya ka šetulod ya nošetšo ya naga ya dikimi tša Mmušo tša meetse teo di welago ka fase ga Makgotla a Nošetšo. WRA gape e dira tlhagišo ya ditefo tša motšhelo go meetse ao a amanagole tšhomišo, ka gona e fa sebaka sa ditefo tša kgoboketšo ya ditefo tša dinyakišišo tša meetse, yeo gape e tlogo dumelela kamano ye bonolo ya kgoboketšo ya ditefo tša tšhomišo ya meetse ka fase ga maano a go bea theko a NWA.

Lehlakore le bohlokwa la tefo ya leano la kgoboketšo ka gona ke go tloša manaetefo a le ditefo tša dinyakišišo tša meetse le kabo ya meetse (ka mabaka a legae le a intasteri) le bakeng sa naga ya go nošetšwa, le go hlagiša ga ditšhomišo ka moka tša meetse (nošetšo e akaredišwe), ye tefo go ya ka boingwadišo, goba laesense ya tšhomišo ya meetse.

Go be go dumeletšwe gore go thoma ka 2004, mananetefo a 2003/04 e tla ba motheo wa mengwaga ye mehlano ya go latela gomme koketšo ya ngwaga ka ngwa ya mananetefo e tla ba go ya ka tekanyo ya infleišene, ka tsebišo ya Kuranta ya Mmušo. Ditefišo gabjale di theilwe godimo ga dibolumo tša kabo ya meetse ditikologong tša naga tšeo di nosetšwago. Go ya ka WRA, Kgoro ya Merero ya Meetse le Kagodikgwa (DWAf) e gapeletšwa go kgobokanya ditefo tša dinyakišišo tša meetse legatong la WRC, ntle le ge Tona a dumelela ka tsela ye nngwe

Go swanetše go hlokomelwa gore sephetho sa pelen sa go dumelela mananetefo a peleng a 2003/04 le go kopanya koketšo ya infleišene.

3.3 Kabelo ya Ditefo tša Lefapha la Dinyakišišo tša Meetse

3.3.1 Mafapha a tšhomišo ya meetse

Mafapha a bašomiši ao ditefo tša dinyakišišo tša meetse di tla lefelwago pele, e tla ba:

- a legae/a diintasteri (balaodi ba taolo ya meetse, ba intasteri, meepo/enetši)
- a temo (nošetšo le nosetšo ya diruiwa) dikiming tša Mmušo tša meetseng le Makgotla a Nošetšo /dikimi tša WUA.

Moragonyana, bašomiši ba bangwe le mafapha a bašomiši ba swanetše go akaretšwa, eupša e sego ntle le ditherišano tša peleng le dihlipha tša bašomiši le ba bangwe bao ba amegago.

3.3.2 Kabelo dibolumo tša tšhomišo ya meetse ka lefapha ka mabaka a go bea theko

Tšhomišo ya meetse ye e ngwadišitšwego mafapheng a go fapafapana e swanetše go laetša palogare yeo e lego gona ya ngwaga ka ngwaga bjalo ka ge e laeditšwe ka go šomiša mekgwa ye e latelago ya tšhomišo ya meetse bjalo ka ge e hlalošitšwe:

Ya legae/Ya intasteri	Kabo ya meetse go ya ka fao golaeditšwego ka tumelelano ya semolao, tumelelo ka kakaretšo goba ka laesense le/goba e tiišeditšwe ke tšhomišo ye e lego gona ya semolao, yeo e fetošeditšwego tiišetšo ya kabo ya meetse.
Nošetšo	Karolo ya Nošetšo e fetotšwe bakeng sa tiišetšo ya kabo.

Dipeakanyo tša dibolumo go ya ka fao go laeditšwego ka godimo go ka ba bohlokwa go ya ka maemo a tšhomišo ya meetse go ka fase goba ka godimo ga, go WMA ye itšego. Ge se se ka diragala, dipeakanyo ka moka di tšile go dirwa go ya ka go ya ka melao ye e beilwego ka gare ga NWA.

3.3.3 Tiišetšo le kabo

Ditšhomišo tša meetse tšeo di ngwadišitšwego tša bašomiši ba go fapafapana go tšwa go ditefo tša dinyakišišo tša meetse di tla šetša tiišetšo ya go ba gona ga meetse goba kabo go ya ka melao yeo e beilwego ka gare ga leano la go bea theko la ditefo tša meetse.

3.3.4 Ditefelo tša dinyakišišo tša meetse tša banwešetši bao ba hlokago methopo

Balemi bao ba hlokago methopo ya nošetšo ba tla lokollwa go lefeleng ditefo tša dinyakišišo tša meetse sebaka sa mathoomo sa mengwaga ye mehlano go sego bjalo ba swanetše go dira dipoledišano.

3.3.5 Tlhagišo ya ditefo tša dinyakišišo tša meetse

Tlhagišo ya ditefelo tša e theilwe godimo ga tšhomišo ye e ngwadišitšwego ya meetse e tla šoma ka nako ye tee le tlhagišo, go ya ka leano la go bea theko la NWA, la ditefelo tša go bea theko tša tšhomišo ya meetse go di-WMA tša go fapafapana ke diinstitute tša maleba tša taolo

ya meetse. Pele ga fao, setlwaedi sa bjale sa go lefiša ditefišo ka meetse ao a fiwago le ditekanyetšo mo go naga yeo e nyadišitšwego, e tla dula e šoma.

3.3.6 Ditefišo tšeo di amango le ditefelo tša dinyakišišo tša meetse

Nako le nako Tona e bea ditekanyetšo tšeo di lebanego le ditefelo tša dinyakišišo tša meetse ka tsebišo ya Keranta ya Mmušo. (Tsebišo ya bjale ye bjalo e be e le ya bo. 249 ka gare ga Kuranta ya Mmušo wa 24 March 2005).

3.3.7 Diphapa no le thušo ya lebakanyana malebana le ditefo tša ditefelo tša dinyakišišo tša meetse

Karolo 56 ya Molao wa Bosetšhaba wa Meetse, 1998 e hlagiša leano la go bea theko la ditefelo tša tšhomišo ya meetse go tliša phapano ya tekatekano magareng ga

- mehuta ya go fapafapana ya ditikologo tša tšeokrafi
- magoro a go fapafapana a tšhomišo ya meetse
- bašomiši ba meetse ba go fapafapana,

goba dikarolo tše dingwe tša ditefišo tšeo di swanetšego go lokollwa go ya ka nako ye e beilwego.

Go ya ka WRA, Tona o na le maatla a go swana, ao a dumelalago leano la go bea theko la ditefelo tša dinyakišišo tša meetse gore di se fetoge le leano la peo ya theko ka taba ye.

4. LEŠOKOTŠO LA KGOBOKETŠO YA DITEFELO TŠA DINYAKIŠIŠO TŠA MEETSE

DWAF e tla tšwela pele go rwala maikarabelo a go kgoboketša ditefelo go tšwa go diinstitute tša maleba tša taolo le go lefela diinstitute tše ka WRC go ya ka WRA, moo e lego gore WRC e tla lefela DWAF lešokotšo.

5. DITEKANYETŠO LE TAOLO YA MATLOTLO

Go phathagatša leano la kgobokanyo ya dinyakišišo tša meets, go tlile go dirwa maitekelo afe goba afe go kgoboketša ditseno ka bokgoni le go lota taolo ya ditšhelete. Go ya ka molao wo, tshepedišo ya ditekanyetšo e tlile go šomišwa tikologong ye nngwe le ye nngwe ya taolo ya meetse. Ditekanyetšo di tlile go romelwa diofising tša tikologo gore di phatlalatšwe le go rerišwana le bao ba amegago. Kutullo ka botlalo ya ditšhupamatlotlo tša WRC e tlile go dirwa gomme dipoelo tša tshepedišo ya thekgo ya tšhelete ya R&D di tlile go tsebišwa go bašomiši ba meetse.

KOKETŠO B

LENANENTŠU LA MAREO

Tekatekano ya Leago: Ka kamano ya methopo ya meetse, tekatekano ya leago e ra ge re dihlopha ka moka tša bašomiši di na le tumelelo ye lekanego ya methopo ya meetse, le gore kabo ya dinolofatši tša methopo ya lefase le phihlelelogo kabo ya meets ya motheo.

Kgotlelelo ya Ekonomi: Kgopolo ye e swara kakanyo ya gore go na le tlhokego ya hlokomela tšhireletšo ya ekholotši le go tšwela pele ka kgolo ya ekonomi goe na le gore diphapano tša ditebanyo.

Bokgoni bja Ekonomi: Kgopolo ye e swara kgopolo ya gore go na le dimynyakw tsa go hlokomela tšhireletšo ya ekholotši le tšwetšopele ya kgolo ya ekonomi go e na le go fapana ka dikakanyo.

Boleng bja Ekonomi: Theko yeo e emelago tlhokego ya boleng bja dilo tše botse tšeo di tlogo hlagelela mebarakeng ya diphadišano.

Tša ka ntle: ke mšomo ye bohlokwa yeo ditshenyagalelo ka botlao goba dikholego di sa akaretšwego ka gare ga sephetho sa ekonomi, mola di hlolago kabo ye kaone go senyane ya leago.

Tebanyo ya mebaraka: ye ke tsela ye e dumeletšwego yeo ka yona bareki le barekiši ba ka ikgokanyago ka gona le go dira kgwebo ka maka ao go dumelelanwego ka wona.

Tumelelo ya mebaraka: Ke maemo ao a hwetšwago ge theko ya dithoto tšeo di rekišitšwego eye kaone e beakanywa gore bareki bao ba nyakagogo reka ba lekana le bokaakang bja barekiši bao ba nyakagogo rekiša.

Ditshenyagalelo tša sebaka: Ditshenyagalelo tše dingwe tšeo di šomišetšwago methopo yeo e hlokegago ka mkgwa wo itšego.

Motheo wa gore motšilafatši o a lefa: Motheo woo o netefatšago gore tefišo ka yuniti ya batho yeo e tlošitšwego go ekhosisteme e lefišwa go bao ban ago le maikarabešo bakeng sa tšhilfatšo yeo gore go šongwe ka ditshenyagalelo tšeo ka gare.

Methopo ya Balemi bao ba hlokago /Balemi ba dikgwa: Entry-level tšhomišo ya meetse Bašomiši ba meetse ba maemo a pele bao e lego badudi ba Afrika Borwa gomme e lego maloko adihlopha tšeo di bego di tingwa menyetla peleng go ya ka histori.

Bohlokwa: Maemo ao a hlagelelago ge nyako ya ye nngwe le ye nngwe ye kaone e filwe bakeng sa kabo ye kaone ye e filwego.

SAPWAT: Lenaneo la khomphuthara leo le fanago ka mohuta wa dinyakwa tša meetse a dimela ka Afrika Borwa.