

## CHAPTER 7 – WATER USE MANAGEMENT STRATEGIES

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### NEED FOR WATER USE MANAGEMENT STRATEGIES

Chapter 4 of the NWA describes the provisions by which water use may be progressively adjusted to achieve the Act's principle objectives of equity of access to water, and sustainable and efficient use of water. Controls over water, to achieve the NWA's aims, are exercised through various authorisations to use that water. Authorisation of water use, which may range from use under Schedule 1 to licensing, requires administrative control of water use by water management institutions. Registration and licensing form the basis upon which charges for water use are made, and provide for the collection of water-related data and information.

It is an eventual objective to license all water users. Until this is possible other measures need to be implemented strategically, so that users can be authorised without unreasonable procedures. Users that received licences under the previous or preceding Water Act, or through other means such as e.g. the Water Court, and have exercised that entitlement, are considered to be lawful users. All water use authorisations will be subject to verification. Users are further required to register their use.

The *Water Use Management Main Strategy* is required to address:

- ⇒ Management of Schedule 1 water use;
- ⇒ General authorisations to manage water use;
- ⇒ Verification of the lawfulness of existing water use;
- ⇒ Processing and issuing of new water use authorisations (licences);
- ⇒ Control of invasive alien plants and weeds; and
- ⇒ Implementation of pricing for water use.

A strategy for Schedule 1 use was not developed, as related management issues were regarded as having a low priority in this ISP area.

### RELEVANT IDENTIFIED STRATEGIES

*The following specific strategies have been developed further:*

- 7.1 General Authorisations;
- 7.2 Water allocations and licensing;
- 7.3 Water trading;
- 7.4 Managing invasive alien plants.

## 7.1 GENERAL AUTHORISATIONS

### Management objective:

To ensure that General Authorisations (GAs) are correctly introduced and updated in the required geographical areas, to allow lower-impact water use and discharge to continue whilst using limited staff in DWAF more effectively.

### Situation assessment:

Refer to **Appendix 7** for the selected GAs of this ISP area. Current GAs published in March 2004 <sup>(32)</sup> in terms of Section 39 of the NWA have stipulated the following:

GAs is a tool in the NWA aimed at reducing the pressure on the need to issue individual licences. All water use needs to be registered and ultimately licensed - but the NWA recognised that this could place an impossible or unnecessary burden on the regulatory authorities, especially in cases where there were many applications for new uses, and little doubt as to the acceptability of the water use – and therefore the issue of the licence.

The GA is therefore aimed at allowing a new user to commence with that use without having to apply for a licence – provided that use is within the scope and limitations of the GA. The GAs stipulate that a person may use water in a defined area without a licence if it does not impact on a water resource, or any other person's water use, property or land. While all use will have an impact on the resource or other users, use under GAs is meant to have a minimal impact. The user must still register that use, but it is automatically legal under the GA process and does not need special approval. Typically GAs are available for the taking and storage of water up to a certain limit per user – and these GAs are declared for areas where there may be plenty of water and no question of overuse, or where storage of water may provide no foreseeable threat to the resource. GAs may also be declared to allow the discharge of wastewater (again very strong conditions will apply), and most recently a GA has been formulated to allow for the modification of stream banks without the specific need for a licence. (A strict reading of the NWA otherwise requires, for example, that every stream culvert must be individually licensed).

GAs were, until 2004, handled as a national function and determined and gazetted centrally, although local input was obviously important. This situation has now been rationalised, a recognition both of the value of the GA as a tool, but also of the importance of reviewing and revising all GAs finely, frequently and at local scale. GAs can be proclaimed for very specific needs in very specific places. GAs is now reviewed at the level of the WMA authority (currently the Region) and may be at quaternary or even finer scale and changed annually or even more frequently if required. It is, indeed, extremely important that all GAs are very regularly reviewed. As soon as there is any indication that the resource needs to be brought under tighter control then the GA should either be rescinded or modified. It is up to the Region to keep track of the situation and to motivate such modifications as required.

It must be noted that a water use under GA (provided that use is registered) carries the same authority as use under a licence. Note that (a) the GA may be modified and this will affect new users – but will not affect the rights of users who commenced that use under the GA in force at the time, and (b) any exceedance of the conditions of use under the GA will constitute illegal use.

GAs are not available for Stream Flow Reduction Activities (SFRAs: Forestry). The reason for this is primarily because the control and licensing of forestry is a co-operative governance function and cannot be authorised only under the NWA. In practice the water-use aspect could be allowed for under a GA - but there is little point in this given that any application must be considered and evaluated by all co-operative governance partners. The mapping of suitable areas for forestry – with mapping outlining areas where water, environmental and agricultural constraints have all been suitably accounted for, is the closest that forestry has come to a GA. Such a map has not yet been produced for the Eastern Cape.

Areas excluded from GAs for the **taking of surface water** are the:

- Sundays River upstream of Nqweba Dam (N11, N12);
- Bushmans River (P10);
- Kowie River (P30);
- Kariega River (P40);
- Tarka River (Q41A, Q41B, Q41C, Q41D, Q44A, Q44B);
- Elands River (Q42A, Q42B)
- Vlekpoort River (Q43A, Q43B)
- Koonap River (Q92); and
- Kat River (Q94).

All of these catchments were excluded from the relaxation allowed by the GA because of the high level of development, mainly irrigation water use outside the area supplied with Orange River water, which limits the available resource in these catchments. (In other words care must be taken with regard to the issue of all further water use licences in these catchments).

GAs do not apply to stretches of rivers previously included in Government Water Control Areas. This effectively excludes those stretches of the Teebus, Great Brak, Great Fish, Little Fish, Schoenmakers and lower Sundays rivers which are used to convey Orange River water.

*The following additional GAs have been proclaimed:*

- **Groundwater abstraction zones** have been declared for many quaternaries throughout the ISP area in all the sub-areas, varying from no abstraction to 400 m<sup>3</sup>/ha/a of allowable abstraction respectively;
- The Great Brak River (Q11, Q12) has been excluded from GAs for **discharge of waste or water containing waste** into a water resource through a pipe, canal, sewer or other conduit and; disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;

Registration with DWAF is required for:

- Taking more than 50 cubic metres from surface water or 10 cubic metres from groundwater on any given day; or
- A combined storage of more than 10 000 cubic metres of water per property.

*For the following uses, no areas within the ISP area have been excluded from GAs:*

- Any **storage of water**;
- **Storage of water in excess of 10 000 m<sup>3</sup>** and falling outside government control areas proclaimed under the Water Act No 54 of 1956;
- **Irrigation with waste or water containing waste** generated through any industrial activity or by a waterwork;
- Listed water resources where the **special limit** for ortho-phosphate as phosphorous is applicable;
- **RAMSAR listed wetlands** in the ISP area;
- **Disposing of waste** in a manner which may detrimentally impact on a water resource;
- **Removing, discharging or disposing of water found underground** if it is necessary for the efficient continuation of an activity or for the safety of people.

Additional GAs were proclaimed on 27 February 2004. In terms of this Government Notice, no areas within the ISP area have been excluded from GAs for the following:

- **Impeding or diverting the flow** of water in a watercourse;
- **Altering the bed, banks or characteristics** of a watercourse.

#### **Strategic approach:**

GAs are generally in place and have recently been updated. Water resources need to be managed at a WMA-scale and the effect of authorisations and impact of additional use under GAs should be closely monitored. The need for further changes or refinements will therefore continually be identified. Identified needs to change the GAs must be evaluated and motivated to enable changes to the GAs to be made.

#### **Management actions:**

1. DWAF staff must continuously identify and motivate any identified requirements for changes to the general authorisations;
2. Review the GAs on a continuous basis. Every GA must undergo a formal review at least once every two years.

#### **Responsibility:**

The RO is responsible for developing this strategy in consultation with the relevant head office Directorate.

#### **Priority:**

3 – Medium.

## 7.2 WATER ALLOCATIONS AND LICENSING

### Management objective:

Implementation of a streamlined interim strategy to reach decisions on licence applications/ water use authorisations and to issue authorisations when required with the appropriate attached conditions, within the national and regional water management framework, taking local conditions into account.

### Situation assessment:

Opportunities for development still exist, requiring licensing decisions, one being the many unused allocations in the ISP area, especially in the ex-Ciskei schemes such as the Kat River Scheme. Unscheduled irrigators currently use this “surplus” water from the Kat River Dam.

A total of 4 000 ha of additional allocations of Orange River water, involving an estimated 38 million m<sup>3</sup>/a, has been reserved for resource-poor farmers in the Fish and Sundays rivers catchments. This will mainly involve new licensing, but small amounts of this water allocation have already been licensed. Further new licensing under the Orange-Fish River Scheme for commercial irrigation is not envisaged. Trading is expected to take place, and will be addressed through the *Trading of Water Use Allocations Strategy*, Strategy 7.3. Applications for creation of storage and for groundwater abstraction are being received and will be evaluated, subject to the Reserve determinations being done.

The accuracy of existing abstraction, storage and stream flow reduction activities (forestry) information on the WARMS database is unacceptable and many problems are encountered with the registered water use authorisations. The RO is busy with administrative checking of the registered information and correction of captured data. Registered water use generally decreases as information is improved.

There is a backlog in the processing of applications for new authorisations. The Regional Office has insufficient resources to undertake the Reserve determinations required for processing new authorisation applications and for the hydrological calculations. There is also extremely limited DWAF RO capacity to enforce, police or monitor activities regarding surface water and groundwater.

The investigation of complaints about illegal water use and control of such use are done *ad hoc*, and is severely restricted by staff capacity. Some cases are pending before the water tribunal regarding illegal groundwater use.

District municipalities and/or local municipalities do not, as a rule, address issues of sustainability adequately during planning of municipal groundwater supply schemes. The licensing process provides an opportunity for DWAF to set conditions relating to both monitoring and sustainable use.

#### a. Fish sub-area

There is a big demand in the Fish River for further irrigation development but there is currently no available surface water beyond that which can be traded or conserved. An augmentation scheme from Teebus to use Orange River water is being investigated for the town of Steynsburg. The Tarka River

catchment is a stressed area, with no demand for further development. The Koonap River catchment holds some opportunities for development, if additional storage is created.

The Kat River catchment seemingly holds some opportunities for development. There is a significant demand for further irrigation and therefore for trading or reallocation. There is uncertainty regarding the need for development initiatives by Government in this catchment. Only 777 ha of the listed 1 599 ha are scheduled and are receiving accounts, under the Kat River GWS. An application for water use has been received for the proposed Tamboekiesvlei Scheme, downstream of the Kat River Dam, which is a land restitution case at Mpofu. Some applications have been received to establish small areas of new forestry.

No applications have been received for water use licences in the Upper Fish. Most surface water resources in the Upper Little Fish and Middle Fish rivers are fully used and no additional water is available for allocation. In quaternaries Q91 A, B and C (lower Fish River), there is some utilisation of lower quality water by unscheduled water users, who have registered their use.

Trading is anticipated between current lower Fish River irrigators. The 1 450 ha allocation made to former Ciskei irrigators should be registered. On the existing Tyhefu Scheme, 380 ha at Glenmore has been licensed, and 680 ha must still be licensed, where irrigators have received allocations.

Large communities in the ex-Ciskei region are in need of water for basic use (quaternary Q93C).

#### **b. Sundays sub-area**

There is a very high demand for expansion of irrigated lands in the lower Sundays River. Potential also exists for new resource-poor farming development and this should be given priority. Requests for the trading of water use authorisations from the Upper Fish GWS to the Sundays GWS have been received.

#### **Strategic approach:**

The licensing approach will be to evaluate and process water use and storage licences only in those catchments or aquifers that clearly have allocable volumes of water, as well as identified and prioritised users for transfers of additional Orange River water (already planned). The processing will be subject to the constraints posed by the availability of resources and information. The establishment of Water Use Licensing Advisory Committees to assist in the development of indicators for the assessment of applications will be promoted. The establishment of a central register of licence applications is recommended, to ensure that the various offices that issue licences are aware of each other's activities, so that a holistic licensing approach is followed.

Evaluate and reject or authorise any application use that exceeds Schedule 1 or the limits of any General Authorisations, with a licence according to the guidelines provided in the "*Assessment of water use authorisations and licence applications*" document. As a transitional measure, in terms of the NWA, allow "existing lawful use" to continue until such time as it is licensed through compulsory licensing. An important step however is to verify that such use is indeed lawful, through verification, and to cancel all registrations of unlawful users. The SFRA Licence Assessment Advisory Committee

(LAAC) will continue to evaluate decisions with regard to forestry. Decisions with regard to water quality management will be evaluated against the DWAF Water Quality Guidelines. Conditions to be imposed regarding new licences will be made in terms of a hierarchy of principles.

### **Management actions:**

1. Attach a high priority to correct registration of all water uses and users on WARMS;
2. Address conflicts regarding unlawful water use and control of such use through the establishment of WUAs, which should then internally address these issues;
3. Address the issue of new and unused allocations through the CCAW to try and reach a decision. This may be a political decision. Short-term trades can be arranged, e.g. in the Kat River;
4. Address re-allocation of any water saved through improved operation of the OFSWSS, and possibly some water saved through distribution canals through the CCAW according to the principle of sustainable and efficient use, as well as equity of access to water, where it is an issue. On-farm savings can be used for expansion of irrigation.
5. The RO must provide a very clear statement regarding groundwater scheme sustainability, with use and monitoring conditions as part of the recommendation accompanying licence assessment;
6. Explore the ramifications of allocating groundwater to Forums to distribute and manage such an allocation among themselves, under advice of the members to enable adequate aquifer management;
7. Investigation of the water situation in the Vlekpoort River, tributary of the Tarka River, will form part of the verification process;
8. Attach conditions when users in the Lower Fish are licensed, but water quality cannot be guaranteed.

*No new licences will be issued for the following catchments:*

- Tarka and Groot Brak rivers.

*Licence applications for use from the following rivers could be authorised after very careful consideration (noting that no river has any significant allocable surface water quantity, without increasing storage capacity, notably in the Koonap and Kat River catchments):*

- Storage and water abstraction can be considered in most catchments except in the Tarka and Groot Brak rivers;
- Groundwater licences may be considered where this does not impact on surface water resources.

### **Responsibility:**

The RO in consultation with the Directorates WU, RDM, NWRP and Information Programmes (where applicable) and the SFRA LAAC is responsible for implementing this strategy.

### **Priority:**

Priority 1 – Very high.

### 7.3 TRADING OF WATER USE ALLOCATIONS

#### **Management objective:**

A clear policy on the conditions for and evaluation of trading of water use authorisations for this ISP area is required.

#### **Situation assessment:**

This Strategy is a subset of Strategy 7.2 Water allocations and licensing. Because this is a sensitive issue, especially with regard to the way it affects or could affect the Eastern Cape Province and ex-Ciskeian irrigators, it has been written as a separate strategy.

Approximately 2 000 ha of mainly unused water use authorisations in the Fish River have recently been traded back to the Upper Orange WMA, especially from above Grassridge Dam, about 800 ha of this for a period of five years. Such trading back to the original source was a recommendation from the ORRS Study. The Eastern Cape Provincial Government is not happy with the idea that additional large volumes of water might be traded out of the Eastern Cape Province, because they are concerned that it could impact on the economy of the Eastern Cape. A decision needs to be taken on whether the Provincial or National interest should take precedence.

Requests for the trading of water use authorisations from the Upper Fish GWS to the Sundays GWS have also been received. There are still significant unused allocations in the ISP area, especially in the ex-Ciskei schemes such as the Kat River Scheme. Because the Kat River catchment holds opportunities for development, there is a significant demand for further irrigation and consequently for trading of water use authorisations, which could put currently unused water back into production. Trading is also anticipated between current Lower Fish irrigators.

#### **Strategic approach:**

As a general rule, it is preferred that unused or underdeveloped entitlements be sold (traded) before entitlements of water that is being used. These transactions, called trading of water use authorisations, must be addressed according to the Trading Procedure.

Address the issue of applications for the trading of unused allocations through the CCAW, to try and reach a decision. This may be a politically sensitive decision, taking socio-economics at a local and regional scale into account. Review the option of proposed trading from the Upper Fish GWS to the Sundays GWS in terms of the volumes to be traded and water quality impacts, taking losses, freshening releases etc. into account, by evaluating impacts through the Orange-Fish-Sundays WSS Model. Other trading applications must similarly be handled on merit. Temporary transfers of one to two years can be arranged.

#### **Management actions:**

1. Assess the potential impacts of trading scenarios on the operation of the Orange-Fish-Sundays Water Supply System;



2. Prepare a submission to the CCAW regarding all unused allocations in the ISP area (and WMA) that could be traded.

**Responsibility:**

The RO in consultation with the Directorates WU, RDM, NWRP and Information Programmes (where applicable), and possibly the SFRA LAAC, is responsible for implementing this strategy.

**Priority:**

Priority 1 – Very high.

## 7.4 MANAGING INVASIVE ALIEN PLANTS

### Management objective:

To effectively implement the regional Working-for-Water (WfW) programme from a water resources perspective.

### Situation assessment:

#### *Invasive alien plants*

The condensed area (equivalent area that the alien plants would occupy if it were condensed to provide a completely closed canopy cover) of invasive alien plants in the Fish to Sundays ISP area is 333 km<sup>2</sup>, as estimated in 1999. The average calculated reduction in system yield is 4 million m<sup>3</sup>/a at a 1:50 year yield for this ISP area. The Albany Coast sub-area is by far the most heavily infested, while infestation in the remainder of the area is generally light.

#### *Working-for-Water activities*

Working-for-Water in the Eastern Cape is currently focusing on mainly state-owned and some private land through funding provided from the Poverty Relief Fund and through the DWAF trading account. Clearing activities have been focussed on riparian zones, and on high mountain areas where priority is on light infestations to reduce the spreading of seeds.

#### *Priorities and planning*

There are a number of considerations. The most important of these are the need to contain the problem by reducing further densification and spread of invasive alien plants (IAPs), after which the focus can be on improvements.

There are, however, a number of other driving forces: water, biodiversity, and the conservation of agricultural land are key forces but must be matched by the cost and availability of resources to tackle the problem, and the importance of the clearing programme as a job creation and poverty eradication initiative.

From a DWAF perspective the most important consideration is water supply. The first priority is to ensure that infestations do not spread, and thus further deplete supplies. The first task is therefore to reduce the risk of further invasions, and this is applicable to all catchments in the WMA. DWAF then sees the eradication of invasive alien plants as a way of improving water availability, and naturally targets the areas currently in deficit, and the catchments above dams. From **Table 3.3** it can be seen that a difference can be made to the yields of the Kat, Bushmans/Kowie/Kariega, and Upper Sundays catchments. There may be other smaller localised priorities well deserving of attention. The clearing of IAPs, thus increasing yield, is an important mechanism in providing water for equity allocations and in reducing the imperative for compulsory licensing.

DEAET, whose main concern is biodiversity, will also have containment and protection of previously uninvaded areas as top priority. Layers of biodiversity value, and the ‘irreplaceability’ of the natural vegetation have been developed under the Systematic Conservation Plans of the Cape (fynbos), STEP (thicket), and SKEP (succulent karoo) programmes, and these can be used to plan prioritisation from a biodiversity perspective.

Co-operative governance inputs to the WfW activity schedule are crucial if the needs of the different departments are to be simultaneously and satisfactorily met.

All clearing plans must be accompanied by a long-term and sustainable follow-up and maintenance plan. The principle is based on the fact that clearing without follow-up will ultimately have a negative impact on water and biodiversity.

. Current WfW priorities are as follows:

- The area approximately covering quaternary P30A near Grahamstown, in the Kariega and Kowie rivers, has a very high priority;
- The upper Kat and Koonap River catchments have a high priority, but this needs to be verified, because it is not clear how the area was prioritised;
- The Tarka River and western part of the Koonap and middle Fish Rivers (‘upper’ portion) has been identified as a second level (high) priority for clearing.

#### *Current projects*

A project is underway in the Koonap River near Post Retief, which is situated north of Fort Beaufort. Another project is underway above Grassridge Dam in the Teebus Spruit, a tributary of the Great Fish River. Additional funds are required to continue clearing. The Makana Local Municipality will undertake the Grahamstown longer-term follow-up clearing. Farmers realise the benefits of the process and sometimes provide logistical and other support.

#### *Enforcement*

Private ownership clearing can be enforced through the Conservation of Agricultural Resources Act (CARA), which is implemented by the National Department of Agriculture. This is however not easy or practical and other forms of incentive are being explored, including the idea of a Water Benefit. The approach should be to get landowners to recognise the risks of invasives and to willingly participate in containment and clearing activities. The forestry industry now has certification as a self-management measure and this is leading to improvements on the forest estates.

#### *Waterweeds*

Working-for-Water is responsible to deal with the requirement for weeds eradication. Water hyacinth is becoming a problem in the Grahamstown water supply dams (Settlers Dam etc.) and in the New Year’s Dam in a tributary of the Bushmans River. Infestation by waterweeds seems to be very cyclic. Management of waterweeds is still handled in an *ad hoc* fashion. There is no clear overall strategy on how to deal with waterweeds in the WMA.

**Strategic approach:**

The clearing of Invasive Alien Plants and the activities of Working-for-Water are essential to the maintenance of catchments and the sustained production of water. Significant volumes of water can be returned to the system for use (4 million m<sup>3</sup>/a in the case of the Fish-Sundays system) through the clearing of IAPs.

The clearing of invasives not only makes more water available to users, but also puts significantly **more** water into rivers over and above this. Clearing is also essential to the conservation of biodiversity, protects catchments from the dangers of erosion caused through destruction of the natural vegetation and the hot fires that often ensue, and maintains the productivity of agricultural and grazing lands.

The Department of Water Affairs and Forestry would like to see the activities of WfW aimed first and foremost at the maintenance of catchment productivity from a water resource perspective. The Department however also recognises biodiversity and other imperatives, and indeed these often go hand in hand with the protection of water resources. The approach is therefore to consult and advise Working-for-Water in the prioritisation of its activities through co-operative governance – primarily involving both DEAET and the Department of Agriculture.

DWAF will endeavour to provide the necessary water resource priorities which reflect the needs and benefits to be gained from the clearing of IAPs and the importance of this activity from a water resource management perspective.

DWAF supports the principle of containment and protection first – by tackling lightly infested areas and areas which exhibit the greatest risk of spread. Any additional resources should be used to remedy and reduce current levels of infestation. No clearing should be undertaken unless follow-up maintenance is guaranteed. DWAF is committed to supporting WfW in these endeavours.

DWAF believes that the clearing of IAPs is an ongoing process which requires the co-operation and buy-in of all landholders. Incentives are required to encourage landholders to maintain and manage their own holdings. It is important to shift the responsibility for IAPs off the shoulders of the State and onto those of the land and water users.

**Management actions:**

The following are required to manage the control of invasive alien plants:

1. Complete the current clearing projects;
2. Identify specific opportunities for clearing areas where this will relieve stressed situations by increasing base-flow conditions;
3. Clarify the priority for the Kat and Koonap River catchments;
4. Continuously provide input to clearing plans to help optimise clearing and job creation within available budgets and identify opportunities for job-creation through use of the biomass;
5. Devise a clear strategy on how to deal with waterweeds in the WMA;

6. Design a regional strategy of co-operation with the Department of Agriculture and Provincial Department of Environmental Affairs to educate farmers on the importance of invasive alien plant eradication.

**Responsibility:**

The RO is responsible, in consultation with D: WUE and Sub-Directorate Environment and Recreation.

**Priority:**

Priority 1: Very high. Programmes are ongoing.