Expanded glossary

Allocatable water
Not all water is available for use. Allocatable water refers to that water that can be allocated after special provisions have been met (the Reserve, international obligations, inter-basin transfers, future contingency and water use of strategic importance (see Figure 2.1)).

Allocation
Allocation is the apportionment of the total available resource within a WMA. The responsibility for allocation is shared between the Minister and the CMA of a particular WMA (see Figure 2.1). The Minister will determine the total available resource and allocate water for the Reserve, international agreements, strategic needs, inter-basin transfers, and water for future use. The allocation of the remainder of the resource will be negotiated by stakeholders (captured in a Water Allocation Plan; see GL 6.6). The Water Allocation Plan is part of the CMS and will be used to draft a Water Allocation Schedule.

Authorisation
This is the process of granting permission to use water for the one or more of the purposes set out in S21 (NWA see Box 2.3). The authorisation process will grant or decline permission to use water according to conditions set out in S22 of the NWA. An entitlement is the outcome of being granted such permission (see S22, NWA for permissible use). Entitlements may require licences but this is not the case with direct entitlements (see below).

Beneficial use of water in the public interest
Water allocation must promote the beneficial use of water in the public interest. This includes a commitment to the fair and equitable allocation of water to all South Africans, which promotes social stability and investor confidence. However, while supporting the provision of water for uplifting the poor, the process should not fall into a "poverty trap" of only providing water to sustain basic livelihoods. The water allocation process should therefore also support and facilitate Broad-based Black Economic Empowerment by promoting larger-scale productive commercial uses of water. This does not mean that the water allocation process will focus solely on issues of equity. While addressing issues of equity, it will also support water uses that generate employment and growth. Similarly, where water must be re-allocated between users, the impacts of curtailing existing beneficial uses of water will be carefully considered and, where appropriate, re-allocations could follow a phased approach. Beneficial use also means promoting a broad range of uses of water across variety of sectors to support a diverse, robust and stable economy (WAR, 2005)

Catchment Management Agency (CMA)
A CMA is a Water Management Institution. It is a statutory body governed by a board representing the interests of users, local and provincial government and environmental interest groups. It manages all water resources within a defined Water Management Area.

Classification of water resources and the National Water Resources Classification System (NWRCS).
Classification is the first stage in water resources protection. Establishing a classification system and applying it to significant resources is a legal requirement. The Act requires that all significant resources (rivers, wetlands, estuaries and groundwater) must be classified and a desired Management Class must be set with stakeholders (see also GL 6.5). The classification System considers not only sustainability but also social and economic attributes of different Management Classes.

Compulsory licensing
A process of compulsory licensing will take place for all existing and potential water users. Chapter 4, Part 8 of the NWA establishes a procedure for a responsible authority to undertake compulsory licensing of any aspect of water use in respect of one or more water resources within a specific geographic area. The procedure is intended to be used to:

1) achieve a fair allocation of water from a resource that is under stress or to achieve equity in allocations;
2) promote beneficial use of water in the public interest;
3) facilitate efficient management of the water resource; or
4) protect water resource quality.

Section 43 (1) sets out criteria for assessing the necessity for compulsory licensing and provides for such exercises to be carried out progressively (see also re-allocation). Appendix 7 indicates the likely order in which the Department intends to proceed with compulsory licensing.

Consensus-building
This process is grounded in dialogue that starts with defining the problem. The aim is for all role-players to eventually negotiate a solution that serves to benefit the majority of the negotiating parties whilst ensuring attention to environmental concerns and those with a weak voice.

Demand management (NWRS, 2004)
For many years the tendency has been to resort to constructing additional infrastructure where the demand for water has exceeded the supply. As water use approaches its full potential however, the cost of resource development increases and the environmental impacts become more pronounced. Management of the demand for water is an obvious option for reconciling imbalances between requirements and availability, and has been applied with great success by some users. Compared with supply-side management, the management of demand in South Africa is relatively under-developed. More information will become available as the effects of the Department's water demand management programme become evident.

Direct entitlements
These are water uses that do NOT require a licence (see Figure 6.6.2). However direct entitlements might need to be registered with the applicable authority (especially in the case of General Authorisations). Direct entitlements include:

- Schedule 1 use: relatively small quantities mainly for domestic, non-commercial, emergency and some recreational use. Use is not registered;
- General authorisation: limited/ conditional unlicensed use of water decided upon for a particular region. Use is registered
- Existing lawful use (ELU): transitional provision for lawfully recognised use under old water law. Compulsory licensing will eventually require all ELU to be licensed
- Special provisions: according to the NWA a special provision that does not require a license may be declared by the Minister

Environmental sustainability
Environmental sustainability has been defined as meeting the needs of the present without compromising the ability of future generations to meet their needs.

Environmental Impact Assessment (EIA)
This is a project-specific process which looks at how a proposed development might impact on the environment, and at how those impacts might be mitigated. The EIA is an extremely important and useful tool in South Africa - and the primary legislative check on most forms of development - a check which also allows for the shaping of the development to be more environmentally acceptable. The completion of an EIA is a legal requirement for many types of development projects including all forms of land transformation, such as conversion of natural veld to agriculture or forestry. The Department of Environment Affairs has the statutory authority to apply EIA to all development, through the National Environmental Management Act (NEMA).

Existing Lawful Use
As a transitional measure, the Act permits water use that was lawfully exercised under any law two years preceding the introduction of the National Water Act (1998). This, termed existing lawful water use, can continue under existing conditions until such time as it is formally licensed.

General Authorisations
Various forms of water use may be 'generally authorised' for particular areas or catchments, and under specified conditions, by means of a general notice in the Gazette. These are larger volumes of water than those of Schedule 1, with some potential for negative impacts on the water resource. This exempts such users from having to apply for a licence for that use, but they are required to register the use, and pay for that registration.

Indirect entitlements
Indirect entitlements to use water refer to those uses listed under S21 of the NWA that require a licence to be issued by a responsible authority (see Figure 6.6.2). Any water use that exceeds a Schedule 1 use, or that exceeds the limits imposed under general authorisations must be authorised by a licence. Indirect entitlements apply to abstraction-related activities, waste discharges and non-consumptive uses.

Integrated Water Resources Management
Integrated Water Resources Management (IWRM) is a strategic approach adopted to managing our water resources. The National Water Act (1998) directs the National Water Resources Strategy to promote the management of catchments within a water management area in a holistic and integrated manner. This means recognizing linkages - between water and land, between upstream and downstream areas of a catchment, and between socio-economic, political and environmental factors. As stated in the National Water Resources Strategy (2004), IWRM will 'make it possible for us to use our precious water to assist in addressing the overwhelming need to eradicate poverty and remove inequity in South Africa'. The National Water Resource Strategy sets out the ways in which we aim to achieve integrated water resources management in South Africa. It describes the policies, strategies, plans and procedures by which this will be done.

Integrated Water Resources Management Plan (IWRMP)
This is a proposed plan for Local Government aimed at dealing with the socio-economic, technical, financial, institutional, political and environmental issues as they pertain to management of the water resource. The plan also serves as a framework to ensure efficient, appropriate, affordable, economical and sustainable use and development of water resources and includes the management of wastes that have the potential to impact on the water resource (Draft report WRC, K8/116).

Invasive Alien Plants
Recent estimates indicate that about 10 M hectares of land in South Africa are infested with invasive alien plants that out-compete and replace the natural vegetation. They are undesirable because they impact on water resources, biodiversity, ecological functioning and the productive use of land. Clearing infestations, especially from the riparian zone, can increase stream flow (NWRS 2004).

Licensed Water Use
Water use authorised in terms of a licence issued under the National Water Act, and upon approval of an application by a responsible authority.

Livelihoods use of water
This term includes the small-scale use of water for basic human needs, as well as for household food security. Further, it includes water used by farmers to grow crops which may be sold or traded for other commodities (WAR, 2005). Although significant progress has been made in addressing the backlogs in water services, the provision of water to meet basic human needs does not make allowance for water for income-generating activities. Similarly, whilst prioritising allocations of water for emerging farmers and small grower forestry schemes, and revitalising defunct irrigation schemes has the potential to provide livelihoods for many people in rural areas, these do not address the needs of the large numbers of people who require water for small-scale activities such as, for instance, brick making, rearing poultry and growing produce for

local sale. The quantities of water required are relatively small - research in small villages indicates that livelihoods can be significantly enhanced by the availability of 50 to 100 l per household per day.

Management Class (see also Classification)
An essential component of Resource Directed Measures is understanding the current state – or Class – of a water resource and, together with stakeholders, setting a desired Management Class of the water resources in a catchment. The NWA facilitates this through the National Water Resource Classification System or NWRCS.

Mediation
This is the process of facilitating negotiation and consensus-seeking. For example, the visioning process might require mediation where a third party is brought in to reduce conflict situations from arising.

Monitoring programme
According to the national norms and standards, this consists of the following elements: establishment (network planning etc), data/sample collection, data processing and sample analysis, data management and storing, the development of information products, dissemination of data and information.

Multiple stakeholder platforms
These platforms provide opportunities for diverse role-player and interest groups to engage in dialogue and consensus reaching. An example of a multiple stakeholder platform is a Catchment Management Forum (CMF).

Negotiation
This is a process where stakeholders are given the opportunity, through dialogue, to reach consensus in the management and planning process. The negotiation process should always be framed by the principles of sustainability, equity and efficiency.

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.

Positions and interests
A position is what a stakeholder wants from a negotiation process, an interest is why the stakeholder wants it.

Public awareness and capacity building
In order for the public to engage appropriately with the IWRM processes and tasks there is a need for awareness and understanding. For example, for a catchment vision to be meaningful and based on real-life situations it needs to be informed by understanding and knowledge of the catchment for which the vision is being created. Programmes should therefore support the public and stakeholder groups with the development of this capacity.

Re-allocation
This refers to the re-allocation of water between users via compulsory licensing or when licences are reviewed (DWAF 2005 b). The (gradual) re-allocation of water is preferred to harsh immediate measures, responding as the need arises in different parts of the country. The main enabling mechanisms are compulsory licensing, supported by water demand management and the trading of water use authorisations (NWRS S 2.5.4).

Reconciliation
Reconciliation refers to the technical process of undertaking a water balance – that is, weighing up the available water resources against the water requirements, or so-called 'water demand'. This can be predicted – or modeled – for a range of scenarios including the current and likely future situations. The CMS seeks to achieve a balance between the available water and the water demand (see below).

Registration of use
As an essential preliminary step towards licensing, and to enable water pricing to be implemented, a countrywide process has been undertaken to register existing water uses. The registration process will ultimately capture information about the location and extent of all Section 21 uses (NWA). The registration data is currently being captured on the Water Authorisation and Registration Management System (WARMS) and registration certificates are being issued. A registration certificate is not, however, a licence to use water, and does not confer legitimacy on an unlawful water use (see NWRS Chp 2, Part 3, 3.2.3.10).

Reserve (NWA (Chapter 3, Part 3))
The Reserve refers to water quality and quantity for two components:

- water for basic human needs, known as the Basic Human Needs Reserve (BHNR), and
- water to maintain aquatic ecosystems, known as the Ecological Reserve (ER).

The BHNR provides for the essential needs of individuals served by the water resource in question and includes water for drinking, for food preparation and for personal hygiene. The ER is captured through Reserve determinations The Reserve refers to both the quantity and quality of the water in the resource, and will vary depending on the class of the resource. The Minister is required to determine the Reserve for all or part of any significant water resource. If a resource has not yet been classified, a preliminary determination of the Reserve may be made and later superseded by a new one. Once the Reserve is determined for a water resource it is binding in the same way as the Class and the Resource Quality Objectives. The Reserve is the only right to water use in the National Water Act, and water must be assigned to meet the requirements of the Reserve before water can be allocated to other uses. As such, a Reserve must be determined before any water use can be authorised. (WAR, 2005). A Preliminary Reserve can be determined before a comprehensive Reserve determination.

Resource Directed Measures (RDM)
Resource Directed Measures, together with Source Directed Controls are the key strategic approaches designed under the NWA (1998) to achieve equity, sustainability and efficiency is Integrated water Resources Management in South Africa. These measures comprise classification system, the Reserve and Resource Quality Objectives. They are described in Chapter 3 of the NWA (36:1998), and together are intended to ensure comprehensive protection of all water resources.

Resource-poor farmers
Usually small-scale users with little access to financial capital and capital equipment. They are a broad category of vulnerable farmers who are usually members of the historically disadvantaged groups

Resource quality
Resource quality does not mean water quality alone. It refers to all aspects of the water resource including:

- water quantity,
- water quality,
- character and condition of in-stream and riparian habitats,
- characteristics, condition and distribution of the aquatic biota.

Resource Quality Objectives (RQOs)
A numerical or descriptive statement of the conditions which should be met in the receiving water resource, in order to ensure that the water resource is protected.

Right to water
The National Water Act only makes provision for **one** right to water, the Reserve.

Scarcity
Scarcity of water resources arises when demand or requirements outstrips the supply or availability (but see water stress).

Schedule 1
This refers to small volumes of water for household use with little potential for negative impacts on the water resource, and for which no application for authorisation needs to be made. Water may not be used for commercial purposes.

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.

Source Directed Controls (SDC)
This is part of two complementary strategies to achieve equity, sustainability and efficiency in Integ rated water Resources Management in South Africa. Together with RDM (see above), these measures contribute to defining the limits on the use of water resources to achieve the desired level of protection. They are primarily designed to regulate water-use activities at the source of impact (using tools such as standards and the situation-specific conditions that are included in water-use authorisations). Source-directed controls are the essential link between the protection of water resources and the regulation of their use.

Stakeholders
The individuals, groups, or institutions that have an interest, or 'stake', in the outcome of the project, mainly because they will be affected by or can have an influence on the project/ activity.

State of the Environment (SoE)
This is an information gathering and reporting procedure providing a report on the current state of the environment. An SoE report sets a baseline but aims also to explain causes (past and present) and effects (present and future). It serves as a useful decision-making and management aid. In South Africa, the SoE reports are currently being developed.

Strategic Conservation Planning
Part of this planning tool deals with the prioritisation of freshwater resources, their status and threats. It is already being used by various provinces on a sub-catchment basis (5000 ha or less).

Strategic Environmental Assessment (SEA)
This is a far-reaching and proactive process, differing fundamentally from EIA in a number of ways. There is no legal requirement for SEA but SEAs are more and more frequently being undertaken voluntarily by Provinces and by Government as a process toward sound land-use planning and management. SEA looks at the whole environment and reviews how that environment can support development. SEA looks not only at the physical environment, but also at the social and economic context. A SEA will gather information, seek to describe opportunities and constraints, deal with issues and work with stakeholders at all levels. Much of the information which a SEA seeks to gather is unique to the process - for example the demands, needs and visions of stakeholders, an understanding of true social and economic dynamics, prospects for alternatives, and the way in which this information is brought into debate and ultimately made available to both developers and decision-makers, so that choices can be made and decisions understood. The Department of Water Affairs and Forestry has embraced the concept of SEA as a tool for use in catchment planning and management, and as a support to the National Water Act.

Strategic Environmental Management Planning (SEMP)
The SEMP is a strategic plan, generally undertaken at the scale of the province. SEMPs are also an important tool in providing the over-arching environmental management system for development clusters or nodes. For example, a SEMP would provide the environmental limits and guidelines for the establishment of an industrial park in which various different companies may be involved.

Stream Flow Reduction Activity
A SFRA is any dryland land-use practice which reduces the yield of water from that land to downstream users (with reference to yield from natural veld in undisturbed conditions). Such activities may be declared as SFRAs if found to be significant.

Validation
Validation of water use is done by comparing the registered water use with the water use that actually took place when the NWA [Act 36 of 1998] came into operation. Three scenarios are possible:

- a water use greater that the use that actually took place could be registered, which is a possible over registration;
- a water use less than the use that actually took place could be registered, which is a possible under registration; and
- a water use equal to the use that actually took place could be registered, which is a possible correct registration.

Verification
Verification is the process of determining the lawfulness of the water use and is done by comparing the water use that actually took place when the NWA come into operation with the extent of the right that was authorised or allowed by the laws repealed by the NWA.

Visioning
Visioning (see GL 6.4) is a process of articulating society's aspirations for the future – in this case of the 'basket' of benefits to be derived from aquatic ecosystem services and the costs associated with their use. The visioning process begins with the generation of a vision statement that addresses our commitment to achieving equity, sustainability and efficiency in Integrated Water Resources Management. Balancing costs and benefits of resource use must include both water resource quality and quantity components, thus both are incorporated into the formulation of a statement of the desired future conditions of resource use and protection.

A vision statement must be converted into, and explicitly linked with, objectives that are useful at the operational level (see Figure 3.3). Unless a vision is linked to practical end-points, or explicit objectives for management, it will not be supported by those involved in the water allocation and licensing process. (DWAF, 2006 a).

Waste Discharge Charge System (WDCS)
A financial mechanism that acts as an incentive for reducing the waste load discharged into a water resource. The system is only applied when an RQO is exceeded within the WMA. The revenue collected from the discharging parties is either in the form of an environmental tax (incentive charge) or used to put mitigatory measures in place (mitigation charge). See Appendix 8 for explanation.

Waste
This includes any material that is dissolved, suspended or transported in water and which is deposited on land or into a water resource in such volume, composition or manner as to cause, or to be reasonably likely to cause, the water resource to be polluted. Wastewater is water containing waste, or water that has been in contact with waste material.

Water Authorisation and Registration Management System (WARMS):
WARMS is an information programme to co-ordinate the registration of water use. It is used for capturing, storing and disseminating water-use registration information.

Water availability
In South Africa, estimates of water availability must take account of the requirements of:

- Resource Quality Objectives and the Reserve (see GL 6.5),
- water to meet international rights and obligations,
- a contingency to meet projected future water requirements including possible transfers of water to another water management area, and
- water use of strategic importance.

Water Conservation and Water Demand Management (WC/ WDM)
This is an approach in water resources management that seeks to improve water use efficiency through using available water more wisely and through seeking appropriate and cost-effective technologies that reduce wasteful use. Water demand management encourages efficient and effective use by encouraging users to reduce their demands on the resource.

Water demand
This technical term refers to water requirements by a user (see GL 6.3). Importantly, a water requirement does not necessarily imply that it is legitimate. In South Africa, water requirements refer to beneficial, effective and efficient water requirements (see NWA, S 2 (d).

Water quality
The physical, chemical, toxicological, biological (including microbiological) and aesthetic properties of water that determine sustained (1) healthy functioning of aquatic ecosystems and (2) fitness for use (e.g. domestic, recreational, agricultural and industrial). Water quality is therefore reflected in (a) concentrations or loads of substances (either dissolved or suspended), or micro-organisms, (b) physico-chemical attributes (e.g. temperature) and (c) certain biological responses to those concentrations, loads or physico-chemical attributes.

Water resource

A water resource is:

- a river or a spring;
- a natural channel in which water flows regularly or intermittently;
- a wetland, lake or dam into which, or from which, water flows;
- any collection of water which the Minister may declare to be a watercourse; and
- surface water, estuaries and aquifers (underground water).

All water bodies in the hydrological cycle, including underground water, are regarded as water resources. Each of these falls within the jurisdiction of DWAF.

Water Services Authority

Any municipality (district or local) that has authority to provide water services within its area of jurisdiction in terms of the Municipal Structures Act of 1998 (National Water Services Bill, 2005).

Water Services Institution

This includes a water services authority. a water services provider, a water board and a water committee (WSA 1997).

Water Services Provider

Can refer to a local or regional Water Services Provider. Any 'person' who provides water services and/or accepts waste water for purposes of treatment to consumers or to another water services institution but does not include a water services intermediary (WSA 1997; National Water Services Bill, 2005)

Water stress

Although useful, as explained in GL 6.3, the term "stressed" can be misleading because it is a relative one. Water stress depends on a range of factors and is not simply a shortfall in water availability versus requirement. Firstly, water deficits will not be experienced equally over the entire WMA, nor at all times. Thus 'stress' can change in space and time. Secondly, in some cases the deficits do not imply that consumptive use exceeds the available water, but that the allowances made for the implementation of the ecological component of the Reserve cannot be met fully at present levels of use. Thirdly, the term 'water demand/ requirement' is also a relative one since it depends upon who is using the water, for what, the levels of assurance required, how it is being used and where. Importantly, a water requirement does not necessarily imply that it is legitimate.

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