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South Africa's Water Resources: WESSA Position Statement

This position statement is based on the principles of ecologically sustainable development, and reflects the Vision; Mission; Aim; Style and Values of WESSA.

This position statement recognises that the socio-economic and environmental landscapes are complex and so must make space for continuous change and emergence.

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This position statement replaces all other WESSA WATER position statements which were written before October 2012.

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INTRODUCTION

In South Africa, water is a scarce commodity with an average annual rainfall of approximately 464 mm compared with a world average of 860mm. It also has one of the lowest Mean Annual Precipitation to Run-off conversion ratios in the world. Water in South Africa is also unevenly distributed geographically and socio-politically which further exacerbates its scarcity. In spite of the aforementioned constraints, South Africa has, through engineering, harnessed nearly the fullest extent of its water resources for economic development.

However, even in light of structurally-induced water provision and internationally well-regarded water policy, we find that, the state of ecosystems associated with large rivers in South Africa is dire; far worse than for terrestrial ecosystems: 84% of the 112 unique river ecosystem types assessed were threatened, with a disturbing 54% critically endangered, 18% endangered and 12% vulnerable; and more than 50% of our wetlands are degraded. Furthermore, there is only a 98% assurance of supply indicating the growing risk of shortages and the likelihood of the country not being able to guarantee that it will be able to meet social, economic and environmental requirements in the not-so-distant future.. This issue will be exacerbated by demographic changes, urbanisation and a growing middle class society, with higher water, food and electricity demands. Climate change poses a further level of complexity, as a change in rainfall patterns also influence water quantity and quality, as well as risks of flood events. These challenges will be ever-present and thus constantly present us with degrees of risk to our water security.

POSITION STATEMENT

WESSA recognises the overriding importance of water resources in Southern Africa. It is one of – if not the –most critical of all natural resources. WESSA thus calls for the protection of both the quality and quantity of its water resources through more robust water conservation and demand management measures, which includes collective action of key stakeholders across all spheres of society – from agriculture to civil society. WESSA calls for resources that are used wisely thus securing a safe, adequate and fair water supply for South Africa’s people and natural environment, which provides the ecosystem services supporting life on Earth.

For the purposes of this position statement, water resources are defined as per the National Water Act (No. 36 of 1998):

Water resource includes a watercourse, surface water, estuary, or aquifer. A watercourse is defined as:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows

WESSA also acknowledges the following:

A Position Statement on Collective Action

Water is a shared risk. Therefore, WESSA believes that it is incumbent on all within the relevant catchment (and across catchments) to strive for responsible management and effective engagement, which is inherent in *effective collective action*, among all parties with a stake in sustainable water management at the relevant scale—local, regional, national, or international. Collective action is defined as “coordinated engagement among interested parties within an agreed-upon process in support of *common objectives*.”

A Position Statement on Freshwater Ecosystems

Freshwater ecosystems refer to all inland water bodies whether fresh or saline, including rivers, lakes, wetlands, sub-surface waters and estuaries. Most of our freshwater ecosystems are critically endangered to endangered. Therefore, WESSA believes that there is an urgent need for our priority freshwater ecosystems to be protected using programmes and tools, like the National Biodiversity Assessment 2011 and the National Freshwater Ecosystem Priority Areas (NFEPA) project that rely on contemporary science. Protection of water resources means managing the resource and its associated ecosystems according to a level that ensures sustainable use. This emphasises the need to balance protection and utilisation in a sustainable and equitable manner through appropriate water resource management.

A Position Statement on Invasive Alien Plants

Invasive alien plants (IAPs) are the single biggest threat to plant and animal biodiversity. IAPs waste 7% of our water resources; intensify flooding and fires; cause erosion, destruction of rivers, siltation of dams and estuaries, and poor water quality.

Therefore, WESSA believes that there is enormous scope to scale up the operations of Working for Water and other natural resource management programmes, with potential for further job creation combined with the benefits of restoring ecosystem functioning and securing ecosystem services. However, WESSA recognises that prevention is better and cheaper than cure when it comes to invasive alien species. This is why WESSA supports the value of a hierarchical approach to dealing with invasive species, with a strong focus on preventing the entry of new high risk alien species and eradicating those that are at an early stage of establishment. Invasive alien species are species that have become established in an area beyond their natural distribution range following introduction by humans, and whose spread threatens ecosystems, habitats or species with environmental or economic harm.

A Position Statement on Mining in sensitive areas

High water yield areas are South Africa's water-producing regions and are of strategic importance for water security. They make up less than 4% of the country's area but only 18% have any form of formal protection. Therefore, WESSA believes that national government should plan strategically and in an integrated manner to ensure our future water security. High-value, water-yielding, sensitive areas should not be mined. WESSA calls for a coordinated, strategic planning approach to mining.

With regards to the Fracking Moratorium: WESSA cannot support Minister Shabangu's recent lifting of the Department of Mineral Resource's Moratorium on Hydraulic Fracturing in the Karoo Basin of South Africa. WESSA believes that there has been insufficient application of the precautionary principle which obligates the proponents of an activity to provide proof that it will not cause harm to the natural environment or people, for the activity to go ahead. (Please read WESSA's Fracking position statement on www.wessa.org.za)

A Position Statement on Wastewater Effluent

Recent investigations and audits of wastewater treatment and compliance with relevant legislation on water concluded that the municipal wastewater business, which treats billions of litres of wastewater each day, was generally considered to be unacceptable, when compared with the required national standards and international best practice. WESSA is concerned that 38% of our wastewater treatment works were found to be in a critical state. These results highlight a lack of human capacity and maintenance of treatment systems as some key concerns. Therefore, WESSA calls on the Department of Water Affairs and relevant local municipalities to commit substantially more funds to the alleviation of the infrastructure maintenance and management backlog that is causing millions of litres of untreated or poorly treated

effluent to be discharged into rivers and streams each day, affecting water availability, and the resilience of the adjacent ecosystems to maintain water quality.

The use of package treatment plants, which are gaining in popularity due to the inability of the municipal infrastructure to cope with development, are of great concern as these are often not monitored as they should be. Therefore, WESSA calls on the municipalities and the Department of Water Affairs to monitor these plants more vigorously.

A Position Statement on Infrastructure

According to the latest Census (2011) findings, out of a population of just over 50 million people there are currently an estimated 4.4-million people with no access to piped water, and a further 8.67 million people with access to a water supply outside a yard. According to the Presidency's development indicators for 2010, since 1994 access to water supply infrastructure in the sector improved from 59% to 93.8% of the population by March 2010. Government maintains that South Africa is likely to achieve the MDG target of universal access to potable water by 2015. While WESSA applauds this seemingly successful feat, WESSA cautions the Government about resting on its laurels in light of a number of key challenges that include the refurbishment of infrastructure for both raw and processed water, which according to the South African Institution of Civil Engineering's (SAICE) Infrastructure Report Card for South Africa 2011, has seen further deterioration, as a result of insufficient maintenance and neglect of on-going capital renewal.

A Position Statement on Water Conservation and Water Demand Management

The reality is that as a country we can no longer afford water losses from all sectors of society but most notably from agriculture, municipalities and the domestic market. Therefore, WESSA believes that the focus on water conservation and water demand measures (WC&WDM) must be strengthened considerably. Not only does this make environmental sense but there is also a greater return on investment through water loss control and water use efficiency. WESSA, therefore, calls on all sectors of society – urban, irrigation, industrial, and mining – to practice discipline, change mind sets (like using urine diversion toilets and rainwater harvesting) and explore innovation with regards to how water is used and wasted. WESSA believes that WC&WDM can play an important role in ensuring environmental sustainability, socio-economic equity and efficiency.

A Position Statement on Water, energy and climate change

The relationship between energy and water use is beginning to get more attention as policy-makers worldwide grapple with measures to transition from heavy dependence on fossil fuels and to aggressively address global climate change by capping carbon emissions. A recent study of the World Business Council for Sustainable Development highlights that water, energy and climate change cannot be addressed as separate problems: "If we truly want to find sustainable solutions, we must ensure that we address all three in a holistic way". Therefore, WESSA believes that climate change will affect availability and use of both water and energy, and acts as an amplifier of the already intense competition over water and energy resources. It is therefore necessary to understand, in a holistic and comprehensive manner, the dynamic interaction between society and its energy needs, the available energy-related technologies and their management, and the constraints of nature, and specifically water resources.

A Position Statement on Water and food security

As a key agricultural input, water is inextricably linked to food security as it both directly and indirectly affects food availability (of sufficient and appropriate quantities and quality of food), access (by individuals to adequate resources for acquiring appropriate foods for a nutritious diet), utilisation (use of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met) and stability (access to

adequate food at all times). Food security is multidimensional. Therefore, WESSA believes that in order to be prepared to deal with the possible consequences, scientists, managers and government need to better understand the impacts of climate change on agriculture and natural resources in South Africa and other developing countries and to develop the adaptive capacity needed to respond to these impacts. This ensures that short-term activities in a specific area do not increase vulnerability to climate change in the long term. Food security is defined as a situation when “all people at all times, have physical, social and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.

CONTEXTUAL INFORMATION

South Africa has low levels of rainfall relative to the world average with high variability as well as high levels of evaporation due to the hot climate, and increasing challenges from water pollution. All of these pose constraints on the amount of water available for use. Although the regulatory framework and the institutional arrangements have changed since the advent of democracy, one aspect remains constant: water scarcity – whether quantitative, qualitative or both – which originates as much from inefficient use and poor management as from real physical limits. South Africa is the 30th driest country in the world and has less water per person than countries widely considered to be much drier, such as Namibia and Botswana. Water run-off is highly variable and unevenly spread in space and time. High variability of water flow is the norm, and the base flow varies from very low to zero. At present, there is a well-developed infrastructure, with more than 4395 registered dams in South Africa, of which 2528 are water supply related. However, in many parts of the country we have either reached or are fast approaching the point at which all of our financially viable freshwater resources are fully utilised. Despite the infrastructure, the occurrence of floods and droughts are part of the “normal” water cycle and water restrictions and flood management are a critical part of the water business. Moreover, the poor and marginalised experience water scarcity most intensely, particularly in under-developed rural areas and areas such as the former homelands. In many parts of the country, we are fast approaching the point at which all of our easily accessible freshwater resources are fully utilised. All South Africans must recognise this situation so that necessary steps are taken to assess current and future demands for water. This will not be an easy task, but with the necessary resolve to plan and implement the required interventions, as well as the application of wise use management, a secure water future can be achieved for both society and ecology.

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