

Local Climate Solutions for Africa 2017: Water & Climate

Wetlands and Spatial Planning: Making use of spatial planning policy and tools to conserve and enhance wetlands in South African municipalities

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Slide 1

Freshwater is increasingly acknowledged as one of the most critically stressed resources as a result of increasing demand and decreasing quantity and quality. This can be attributed to population growth and associated livelihood activities, the pollution of water sources and sinks, and droughts and floods exacerbated by global climate change. This is most dominant in urban areas where the influence of humans is greatest.

Wetlands in particular are an important part of freshwater systems that are undervalued and therefore undermined by urban and rural planning and land uses.

With the competition for access to water expected to become even fiercer, it is necessary to intervene not only through policy but intentionally through spatial planning too.

It is for this reason that I am speaking to you today about wetlands and spatial planning to unpack how spatial planning policy and tools may be used to conserve and enhance wetlands in our municipalities.

Slide 2

To frame our discussion today, I'd like to quote Woltjer and Al (2007:212), who said that

"The majority of decisions with regard to water management are made without reference to spatial planning issues related to urbanization and population growth, and conversely development and land-use decisions are also made with little consideration of their effects on water systems."

This is evident where I live in the City of Cape Town. For example, the activists seen in this photograph are protesting the development of a shopping mall next to an ecologically and socially important wetland called Princess Vlei. The development application was eventually not approved but the fact that the application went so far through the process is evidence of the lack of understanding and respect for wetlands in our urban areas.

Slide 3

The South African Water Act defines wetlands as

"land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and

which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil”.

Slide 4

In South Africa, we are bound by both international commitments and national laws which guide decision-making.

With regard to International commitments, the most recent being the Sustainable Development Goals. The conservation and enhancement of wetlands is acknowledged to contribute to the achievement of the following goals: SDG2, 6, 11, 13, 14, 15¹

¹ [Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture Rice grown in wetland paddies is the staple diet of nearly three billion people. The average human consumes 19 kg of fish each year. Most commercial fish breed and raise their young in coastal marshes and estuaries. 70 % of all fresh water extracted globally is used for crop irrigation.

Goal 6: Ensure availability and sustainable management of water and sanitation for all Wetlands ensure fresh water, help replenish ground aquifers, and purify and filter harmful waste from water – such as fertilizers and pesticides, as well heavy metals and toxins from industry.

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable Wetlands act as natural sponges absorbing rainfall, providing protection against coastal and river flooding to (partially) offset the need for man-made infrastructure. They also help reduce drought, protect coastal areas for fisheries nurseries and regulate sediment transport thereby contributing to land formation and coastal zone stability.

Goal 13: Take urgent action to combat climate change and its impacts Wetlands act as carbon sinks. Peatlands alone store more than twice as much as all the world’s forests. Coastal wetlands reduce the impact of rising sea levels, acting as storm surge buffers and providing erosion control.

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development Without wetlands, the water cycle, carbon cycle and nutrient cycles would be significantly altered. Water cycles, essentially the continuous movement of water on, above and below the surface of the Earth, are of critical importance to biodiversity and to the functioning of virtually all terrestrial and coastal ecosystems. Coastal wetlands are important for sustaining seas and marine resources, for example as nursery grounds for many marine fisheries.

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss The values of benefits provided by wetlands, per unit area, have been consistently shown to be orders of magnitude higher than for other ecosystems with the

Slide 5

Nationally, South Africa has an advanced and progressive legislative framework that concerns the environment, water and biodiversity, both in terms of development planning and national government priorities. This includes the list shown here. There is no single law or policy that specifically governs and regulates wetlands. This means that there are more general principles that may be applied to the conservation, enhancement and management of wetlands.

It is possible to read up on each of these laws in the Wetlands Strategy and Action Plan Guidelines so I will not go through them all. I would however, like to bring your attention to some key legislation to set the stage for our discussion here today.

Slide 6

In the Constitution, Section 24 holds the right to the environment which states that, every citizen has the right to an environment that is “not harmful to his or her health or well-being, and commits the country to conservation and sustainable management and use of our natural resources.

National Water Act: promotes water use that is in the public interest and beneficial for the achievement of equitable and sustainable economic and social development. It provides for increased legal protection of water sources and all water users, and requires that all phases of the hydrological cycle be considered and managed.

National Environmental Management Act. 36 of 1998 (NEMA) is the overarching framework legislation for environmental governance in South Africa. It includes environmental principles such as the precautionary principle and prescribes a general duty of care not to cause significant pollution or degradation of the environment

Slide 7

As can be seen in the diagram I generated, water is predominantly the mandate of national government, in particular the Department of Water and Sanitation, along with the catchment management authorities the Department delegates responsibilities to.

As per the Municipal Systems Act, 32 of 2000, Municipalities have the duty to strive to ensure that municipal services are provided in an environmentally sustainable manner.

Following this, wetlands can be considered part of a system of green infrastructure in municipalities that support service delivery (quantity and quality of water) and disaster risk management (flood attenuation through holding water and slowing the flow of water,

major benefit delivered through improving water security.

<https://www.cbd.int/waters/doc/wwd2015/wwd-2015-press-brief-sdg-en.pdf>]

drought alleviation as points of recharge for aquifers). Thriving ecological systems that are centred on wetlands may also offer the opportunity for public spaces and economic development.

Furthermore, from a common understanding, municipal planning includes the control and regulation of land use and forward planning, also known as spatial planning.

Slide 8

As the Department of Water Affairs and Sanitation has stated: Because all water resources are linked to each other and are affected by the biophysical environment and human activities, water resources must be managed taking into account the relationships between water, the biophysical environment, and social, economic, and political factors.

Slide 9

Therefore, to conserve and enhance the value and functioning of wetlands, water systems need to start influencing the form and structure of our urban areas. As is shown here conceptually for the City of New Orleans in the USA.

Spatial planning is concerned with “the problem of coordination or integration of the spatial dimension of sectoral policies through a territorially based strategy”. Spatial planning addresses tensions and conflicts to promote a more well-informed arrangement of activities and to reconcile policy objectives.

Spatial planning could be used through influencing the type and location of developments to reduce the generation of pollution near ecologically sensitive areas, addressing issues across multiple spatial scales and sectors, and involving multiple stakeholders so conflicts can be discussed and resolved

Slide 10

In South Africa, to guide spatial planning, there are a few sets of key legislation. Nationally, this is the Spatial Planning and Land Use Development Act, 16 of 2013 (SPLUMA).

SPLUMA is the first national spatial planning law and sets out a framework for forward planning and land use management and decision-making. SPLUMA sets out a number of development principles which apply to municipalities when regulating the use and development of land, and must guide a municipality in policy preparation. An important constitutional consideration that SPLUMA reiterates is that of spheres rather than tiers of government, meaning that no province or national department may overrule a municipal planning decision.

SPLUMA also introduces new requirements for SDFs, including a strategic assessment of the environmental pressures and opportunities within the municipal area and the spatial location of environmental sensitivities and that the Land Use Zoning Scheme must give effect to the SDF and IDP.

Further to this, each province and municipality has its own provincial planning legislation and local by-laws, such as the Western Cape's LUPA and City of Cape Town's Municipal Planning By-law. Now, I am in no way holding these up as perfect laws but rather using them as example.

In LUPA, spatial sustainability is applied in land use planning by protecting areas unsuitable for development, including wetlands.

In Cape Town's by-law, there is an Open Space zoning dedicated to the passive and active recreational use and protection of landscape areas, including wetlands. This zone permits limited primary and consent uses that support environmental protection and recreational use.

Slide 13

Spatial Planning offers mechanisms and tools that are particularly helpful in implementing a more integrated approach to identify conflicts, if done well.

Firstly, the Integrated Development Plan: The Integrated Development Plan (IDP) is a strategic document that co-ordinates the work of all municipal departments and sets the vision and priorities for the local government over a five-year period. Sections 152 and 153 of the Constitution give effect to the IDP through stipulating that a municipality must structure its administration, budgeting and planning processes to give priority to the basic needs of its communities and promote their social and economic development to achieve a democratic, safe and healthy environment. This is an important medium-term planning instrument that sets a framework for all important issues identified through a public participation process. Wetlands should be identified as key priorities as part of natural systems, infrastructure systems and/or holistic water systems and noted within each relevant section of the IDP. Policy statements, roles, indicators of performance and budget must then be allocated accordingly. The IDP public participation process can also be used to highlight the value and importance of wetlands in the municipality, while increasing residents' knowledge of wetlands.

Spatial Development Frameworks inform the IDP and translate it spatially, furthermore SDFs guide the spatial priorities and the direction of growth in the municipality. This means that data can be gathered in the analysis phase of the SDF that identifies where wetlands are, their current state and functionality, and the level of threat they face due to surrounding land uses. As information from different sectors and departments is overlaid, it is possible to identify any conflicts now or in the future or areas of aggregated opportunity. This can help municipalities to align land use with the functionality of wetlands so that only compatible uses take place near these water bodies.

Integrated Zoning Schemes are now required to cover all of a municipality. Wetlands should be taken in to account when land is zoned, especially non-perennial wetlands that change between seasons. This can be done by allocated 'water', as a land use as is done in the Netherlands, or allocating a land use for low level use that protects not only the wetland but also surrounding land that is essential for its functioning, as was done in Cape Town.

Further tools for incorporating wetlands in municipal planning and policy include: Built Environment Performance Plan, Water Services Development Plan, Stormwater Management Plan, Strategic Environment Assessment, and Environmental Management Plans.

Slide 13

In closing I would like to leave you with this quote: “Ultimately, the ‘spirit’ of water management goes beyond the achievement of good water status and requires an evolution in the relationship between human societies and the water environment, something that spatial planning processes have the potential to help stimulate”