

SECURING THE FUTURE OF ONDIRI SWAMP FOR CONTINUED LIVELIHOOD SUPPORT & BIODIVERSITY

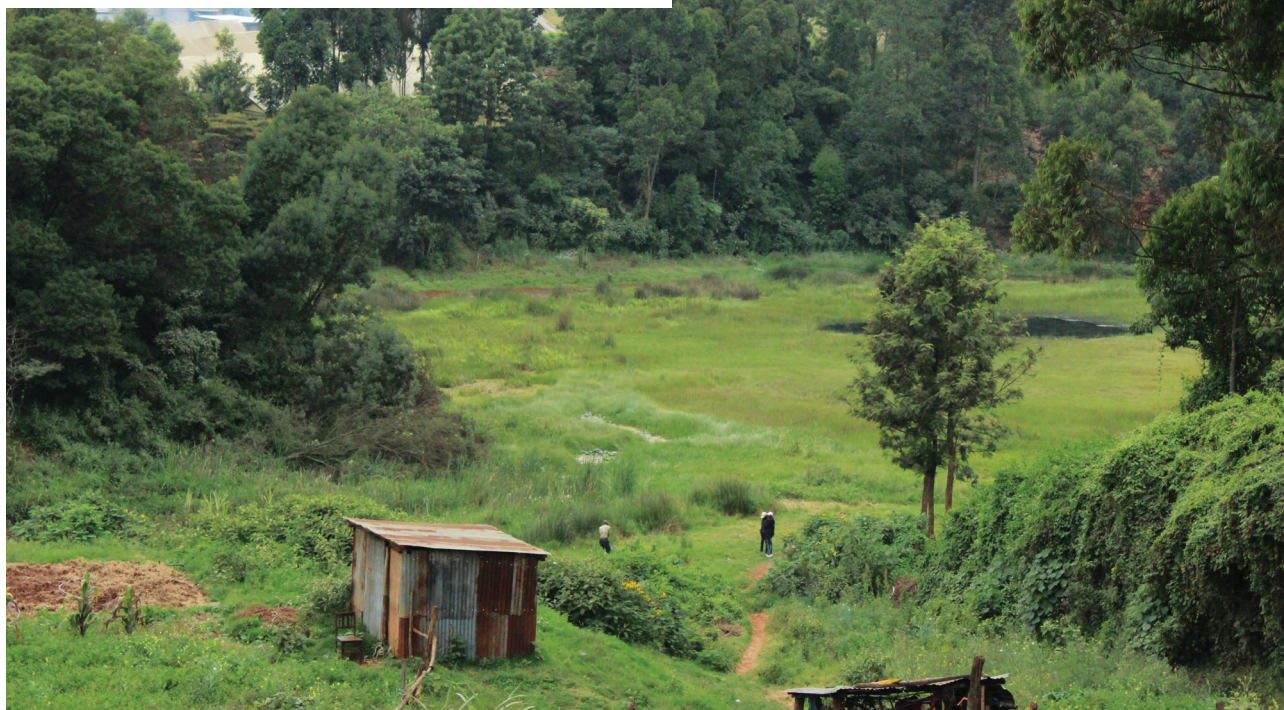
PREFACE

Ondiri Swamp is situated around a latitude of 1°15'S and longitude 36°40'E in Kikuyu, Kiambu County. The swamp covers approximately 30 hectares, two to three meters deep with a perimeter of about 3.3 km and lies at 2000 meters above sea level. The area enjoys favourable climate for most periods of the year, with temperatures ranging between 20.4°C in the upper highlands and 34°C in the midlands of Karai in Kikuyu sub-county. The area has a mean annual temperature of 26°C. Rainfall is bimodal, with long rains occurring in April and May and short rains during the months of October and November. The average annual rainfall is 1500 mm. The area has a high population density estimated at 500 persons per square Kilometers (Macharia and Thenya, 2007a).

The wetland is part of ONKARU Sub-Catchment Management plan which covers an area of 118 square kilometers. The main direction of outflow of the wetland is to the south and east where several small streams join downstream to form larger streams that make the headwaters of Nairobi and Athi Rivers (Ndiritu *et al.*, 2006). The wetland is also linked to Kikuyu springs which is a major source of water to Kikuyu and Nairobi throughout the year.

A study on economic valuation of Ondiri Swamp by Mutahi *et al.*, established that the swamp provides various resources and services to people living within its environs. Locally, the swamp provides water for domestic use, irrigation and livestock, as well as fodder for livestock particularly during the dry season (Macharia and Thenya, 2007a). Past studies on the swamp showed it was an important habitat for fish, resident and migratory birds and aquatic plants (Macharia *et al.*, 2007a). Some of the common birds recorded in the area included storks, egrets, ibises, hamerkops, kingfishers, cranes and plovers.

Despite the ecological, socio-economic importance and its high potential of being an Important Bird Area (IBA), Ondiri swamp lacks formal protection status, and has received little attention. The swamp is faced with a myriad of threats and challenges that have resulted in its continued degradation and over- exploitation of its resources. These include but not limited to pollution, water abstraction, encroachment, overgrazing, planting of Eucalyptus on its riparian reserve, and infrastructural development. Besides lack of formal protection status, these threats can



Permanent structures and Eucalyptus tree species surrounding Ondiri Swamp.



Scores of Greenhouses surrounding Ondiri Swamp.



Arrow roots cultivation at the edge of Ondiri Swamp.

also attributed to low environmental literacy among the surrounding community and poor coordination among the stakeholders.

The wetland has a Sub-Catchment Management Plan made by ONKARU Water Resource Users Association to support in the management, conservation and protection of its water resources. However, this plan has been implemented in piecemeal due to low capacity of the ONKARU WRUA and lack of proper coordination among stakeholders working within the Catchment.

In a bid to address some of the aforementioned threats to this wetland, Kenya Wetlands forum through the project: **“Advocating for Sustainable Conservation and Management of Ondiri Swamp for Livelihood Support and Biodiversity”** funded by Global GreenGrants, trained riparian communities surrounding Ondiri Swamp on the importance of conserving the wetland, developed a Joint Action plan through stakeholders participation and produced a media feature that highlighted the plight of Swamp and the urgent need to protect and conserve it.

This policy therefore assess the project findings with an aim to provide information on the current status of the wetland and stimulate policy interventions to save this vulnerable yet a very important resource.

WHAT ARE THE ISSUES?

The project's findings revealed several policy issues that require urgent attention from and action by several stakeholders. Kenya has robust legal framework that guides and regulates on how wetland resources are used and managed. The project revealed cases of non-compliance with laws, policies and regulations, especially those that relate to Environmental Impact Assessment (EIA), water permits and wetland management.

According to the project findings, some of the greenhouse operating around the swamp do not have EIA licenses and environmental audit reports. Environmental Management and Coordination (amendment) Act 2015 requires that EIA is conducted and a written approval obtained from NEMA before such establishments are constructed near a wetland. Further, the findings revealed that some of these greenhouses are situated less than 30 meters from the swamp which is in contravention with the Environmental Management and Coordination, (Water Quality) Regulations 2006. The regulation stipulates that no person shall cultivate or undertake any development activity within a minimum of six meters and a maximum thirty meters from the highest ever recorded flood level of either side of a river, stream or water body.

The project findings revealed cases of encroachment into the Swamp. Surrounding landowners have encroached into the swamp for agricultural expansion and construction of residential houses. The riparian landowners have



Water Resources Authority (WRA) officers disconnecting illegally installed water pumps at Ondiri Swamp.

built permanent structures and cultivated horticultural crops beyond the setback line. The eroded soil cause sedimentation of the swamp. Pollution is a major concern for the Swamp's long-term sustainability. The project findings revealed that surrounding greenhouse establishments and irrigation farms lack proper waste management practices and this has led to release of chemical effluents into the Swamp. Furthermore, the use of septic tanks in the surrounding residential homes, and the construction of highrise buildings near the Swamp has accelerated ground seepage of sewerage effluent into the Swamp. It was noted that the surrounding residential houses use the storm-water spillways of the Southern by-pass road to release urban effluents into the swamp causing its contamination. All these practices are in violation of rule 81 of the Water Resources Management (Water) Rules 2006 which prohibits discharge or application of any poisonous, toxic, noxious or obstructing matter, radioactive waste or other pollutants into a water body.

Unregulated water abstraction. The project findings revealed that there are over 40 permanent water pumps



Waste water from Kikuyu town.

drawing water from the swamp, out of which, 50% lack permits and some of those with permits are unmetered making it difficult to monitor water abstracted from the Swamp. This contravenes section 36 of the Water Act, 2016 which requires the issuance of permits for abstraction of water with works from a water source.

The Growing of exotic tree is a major concern for Ondiri Swamp. The project findings revealed that the surrounding riparian landowners have replaced indigenous trees with fast growing exotic tree species. Eucalyptus trees take up a lot of water as compared to indigenous tree species threatening the long term sustainability of Ondiri Swamp and violates the Water Rules (2007) which prohibits the planting of exotic species that have adverse effects to a water resource.

POLICY RECOMMENDATIONS

- 1) NEMA in collaboration with County Government of Kiambu should conduct annual control audits to ensure all the greenhouses around Ondiri Swamp are operating in compliance with the framework of environmental laws, policy, regulations, procedures and guidelines. Furthermore, NEMA should not approve any new greenhouse establishments or any development project around the swamp until the swamp is demarcated and gazetted.
- 2) WRA should verify whether all the water abstraction permits are registered or not, and regularise them. In addition, WRA should revoke the permits for any water abstractors with unmetered water pumps and stop those operating without valid permits.
- 3) Ondiri Swamp water reserve is unknown and this gives room for over-abstraction which may threaten its ecological integrity and ability to provide ecosystem services and goods. WRA in collaboration with other stakeholders should work together to develop water allocation plan for the swamp.
- 4) County Government of Kiambu should collaborate



Community sensitization meeting at KERWA offices Ondiri.



Stakeholder engagement meeting at EAWLS Boardroom.

with other key stakeholders such as WRA and NEMA among others to delineate the boundaries Ondiri swamp and gazette it to prevent it from further encroachment and over-exploitation of its resources.

- 5) County Government of Kiambu and Kikuyu Water and Sewerage Company in partnership with other stakeholders should prioritise and initiate establishment of Kikuyu Sewerage system. This will minimise urban effluent into the wetland. NEMA should take action against any resident found releasing any waste discharge into the Swamp.
- 6) County Government, NEMA, WRA and other actors including the non-state actors should sensitize the communities on impacts of growing exotic species such as Eucalyptus on the swamp riparian land and promote growing of indigenous trees.
- 7) Conservation initiatives within Ondiri Swamp can only be effective if a watershed based approach is adopted. This is because whatever happens in the upper catchment affects the swamp and well as the streams and rivers that are recharged by the swamp. This policy brief therefore recommends review and full implementation of the ONKARU Sub-Catchment

Management Plan, and adoption of an Integrated Water Resources Management approach.

- 8) The non-state actors interested in the protection and conservation of the swamp to collaborate, engage and partner with the government agencies in advancing the implementation of the policy recommendations above. Further, the non-state actors should track, monitor and report on the implementation progress to ensure the relevant authorities remain accountable.

REFERENCE

Macharia, J. and T. Thenya, 2007a. Conservation and Management Assessment of Ondiri Swamp: Shared Natural Resources. A Baseline Study. National Museums of Kenya, Nairobi, Kenya.

Mutahi, L.N., Mwaura, F., Rego, S.A.: Economic valuation of wetland ecosystems: A case study of Ondiri Swamp in Kiambu, Kenya (abstract).

The Constitution of Kenya, 2010

The Environmental Management and Coordination (Conservation and Management of Wetlands) Amendment Regulations (2017). Kenya Wetlands Atlas (2012).

The Water Act, 2016.

Water Resources Management Authority study report on groundwater recharge to Kikuyu Springs (2011) as part of Kenya Natural Resources Management Project.

ACKNOWLEDGEMENT

This Policy Brief development was supported by Global GreenGrants Fund through the project “Advocating for Sustainable Conservation and Management of Ondiri Swamp for Livelihood Support and Biodiversity”.

Authors: Charles Mwangi; Gladys Rutto; Jabes Okumu

Suggested Citation

Mwangi, C., Rutto. and Okumu, J. 2018. Ondiri Swamp Policy Brief. Securing the future of Ondiri Swamp for continued livelihood support and Biodiversity.

Disclaimer: The views expressed in this publication do not necessarily reflect the views of the Global GreenGrants Fund.



This policy brief is a publication of:

The East African Wildlife Society Riara Road, Off Ngong Road Kilimani, Nairobi | P.O.Box 20110-00200, Nairobi, Kenya.

Mobile: +254(0) 722 202 473 / + 254(0) 734 600 632 | Tel: +254 203 874 145 | E-mail: info@eawildlife.org