



## MSc. Projects at Chemistry Department

**PETER NGOLO**

### The distribution of fungicides and acaricides in Ewas Narok wetland ecosystem: Using pollinators (honeybee) as an indicator

#### Ewaso Narok Swamp

Ewaso Narok swamp is a semi-arid riverine papyrus swamp formed as a result of extensive flooding of the Eng'are river valley. It is found at Rumuruti in Laikipia west District, Narok County, Kenya (Government of Kenya, 1994). Rumuruti is a home to a number of people, livestock and wildlife all who depends entirely on the wetland for survival. In dry season for instance, there is increased activities in the wetland such as farming, and both the wild animals and livestock come to the wetland for pasture and water. In addition, squatters have also encroached on the wetland for settlement. Wetlands are unique and important environmental features that acts as a habitat for aquatic life, migratory birds and waterfowl. However, despite not covering a large area of the Earth's surface, wetlands provides a huge number of ecosystem services such as maintaining biodiversity through mitigation of floods, protection of coastal areas from storms, improvement of water quality, recharging ground-water aquifers, serving as sinks and production of food e.g. fish and building materials such as sand, papyrus. As a result, many wetlands are often recognized as important conservation or restoration targets.

#### Wetland Farming Vs. Pesticides application

Over the years, the population in Ewaso Narok especially Rumuruti has increased leading to more demand for food and land for farming, hence more land has gradually been put under farming. This has also been due to the fact that Rumuruti is one of the areas that is used for production of horticultural crops like tomatoes, cabbages, French beans and kales, that is used to feed major cities of Kenya like Nairobi (Mwita, 2013). The intense farming around Rumuruti wetland has led to unmonitored and unregulated increase in the use of agricultural pesticides such as fungicides and acaricides to ward off diseases and pests that may otherwise affect the crop yields and livestock production. Pesticides have been used for disease vector control in both the developed and developing nations for many years mainly in agriculture and livestock development (Wandiga, 2001).

However, anecdotal evidences shows that, though pesticides use brings with it benefit to farmers, such as increased yield of crops, their effects to the wetland ecosystem may out way their benefits and with time the entire biodiversity around and within the wetland will be wiped out.



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Work Package	
Countries of work	Kenya
1 <sup>st</sup> Supervisor	Dr. Nawiri – Kenyatta University
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Subject	Chemistry
Faculty	Applied Sciences
University	Kenyatta University
Working period	2 Years