

# SHRINKING RIVERS AND FORESTS

*To some a forest signifies an area dominated by trees; to others it suggests a source of livelihood (for farming, bee keeping, tourism, medicine source, firewood, timber etc.); to others it indicates a space for interaction (culture and religion); to others a natural habitation for animals, insects, birds and different plant species; to others a temperature control system, a carbon sink or a source of water (water catchment).*

As communities have sought for energy, water bodies have been compromised leading to the dilapidation of different native flora and fauna. This has exposed communities to harsh environmental conditions which affects the poor most harshly due to their direct reliance on these resources.

In seeking to find the impacts of deforestation to the local community and measures being put in place to conserve the forests, I visited Thuitu Village, in Gitugi constituency, Murang'a County, approximately 30 km from the Aberdares Mountains. Murang'a County boasts one of the highest rates of forest cover in Kenya at 14.5%, set against a national average of 7%<sup>1</sup> forest coverage. Residents are, however, unsettled due to temperature increases. Amid the environmental degradation happening across Kenya and the world, this community has not been spared. The rains have delayed, such that some streams have dried up while others are increasingly deteriorating as a result of causes both internal (extensive planting of eucalyptus and over-usage of river water for domestic and agricultural needs) and external (reduced forest cover as a result of logging and encroachment) to the community.

Water access for domestic use is a challenge in Thuitu village. The only stream in the area, 'Kiawamuigi', is drying up. Residents can queue for up to 3 hours in a day for water as some cover a distance of 500 meters to access their nearest water point. A community that previously depended on agriculture for income generation now faces severe challenges to grow enough crops to sustain their own households.

The effects of deforestation and changes to the atmosphere, in turn, have caused hardship. Hannah Muthoni Chege, a banana farmer in Thuito village, is suffering as a result of changing climatic conditions. Part of her land has experienced landslides, which she attributes to excess felling of trees within the area. Worse still, the banana plantation's yields have reduced. Whereas previously her farm would yield big bananas, such that the proceeds enabled her to educate her children and meet her household requirements, now, due to reduced rainfall and frequent drying up of her wells, the bananas experience water stress. Because there is not enough water to irrigate them, their stems are weak and the plants frequently break before the fruit matures enough to be harvested. With reduced yields and lower income, Hannah has been forced to engage in other agricultural activities, including

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<sup>1</sup> Business daily, September 15, 2016 by Kiarie Njoroge

rearing livestock and planting maize and beans, which rely equally heavily on the environment. Thus, she and her family remain highly susceptible to all negative impacts of climate change.



**Table 1: Immature banana fruit on the ground as a result of the weak stem caused by water stress**

### *Forests and Energy*

Further north, in Ruru Village, which rests on one side of the Aberdares Mountains, the situation is so precarious that the community has engaged in the planting of “wood lots” (trees grown within their compounds to provide them with a consistent source of firewood for their families and to sell to local tea factories) to reduce the pressure on the natural forest. Residents say that the forest was under immense threat until the Government came in and fenced the forest, after which the “wood lots” came to prominence, which has since seen the forest begin to be rehabilitated.

Nevertheless, the communities here engage in the cultivation of eucalyptus trees as an economic activity. Elsewhere, forested areas have been converted to tea farms for the same reason. In either case, what suffers is the indigenous forest.

John Kinyua, a representative from the Gatunguru tea factory, says they rely both on tea farms and eucalyptus trees for the production of the final tea product. He attests that with reduced rainfall this year, there has been an evident decline in the quantity of tea leaves brought to the factory for processing, especially during the months of March and April.

But the other vital resource for tea processing is an energy source, as can be seen visually by simply observing the wood in Gatunguru tea factory’s storage facilities. It is indeed a positive that the energy used comes from renewable sources, but the fact remains that the energy demands are huge. The primary source of this energy is eucalyptus, an easy tree to grow. Thus, there is a willing buyer for an easy cash crop; it would seem that conservation measures will be a necessity if indigenous forests are not to be almost entirely replaced with eucalyptus.



The conservation programs undertaken by the tea factory do not therefore come as a surprise. Gatunguru tea factory has begun a program to educate local communities and institutions on the importance of bio-diversity conservation. They also have a tree nursery from which they sell eucalyptus seedlings at subsidized rates or donate to schools in order to increase forest cover and reduce or eliminate their reliance on indigenous trees, so as to protect the native forest. They also have a demonstration of indigenous forest for communities to see the local varieties of trees that they can grow in their homesteads or community. John Kinyua, an extension officer at Gatunguru tea factory emphasized that there are policies in place preventing factories from using indigenous trees or plants in their production with an aim of conserving this vital resource.



**Table 2: Part of the timber stored in the Gatunguru Tea Factory sheds**

As Ruru village marines in the economic gains of planting, cutting and selling the eucalyptus trees, Thuitu village shrugs at the sight of the trees which they say have brought about their water woes leading to their reduced agricultural yields. Life has indeed become difficult for them. The tea factories, on the other hand, are happy with the high calorific value of the eucalyptus trees and are encouraging its growth. So, should the growth of eucalyptus be encouraged and indeed advocated for?

Some have argued that any tree planted suffices while others argue that some trees like the eucalyptus, if its planting is not regulated can lead to negative environmental impacts, especially if heavily planted adjacent to water bodies or if planted in natural forests. The eucalyptus tree has undoubtedly become popular for its fast growth attributes, medicinal value, timber resource, firewood, pulp wood etc. The tree is also used to reclaim degraded land and reduce heavy pressure on natural forests. On the other hand, this tree species is unpopular because it has replaced many indigenous forests in Kenya and other parts of the world depleting food and shelter sources and therefore affecting birds, animals and plant species. Researchers state that it reduces biodiversity as compared to natural forests. Other than that, it is known to deplete ground water, moisture reserve

of the soil, nutrient levels and increases incidences of allelopathy (suppressing the growth of other plants). The discussion may boil down to economy versus ecology.

The eucalyptus tree clearly has its advantages and its disadvantages. It is therefore of utmost importance to have its cultivation regulated to avoid bio-diversity loss and prevent its negative impacts in areas that are already facing increased effects of high temperatures and water scarcity.

### **Conclusion**

We cannot ignore or continue to have a blind eye to the important ecological, social, cultural and economic functions forests play. Indeed, the cheapest and most efficient way to mitigate the harmful effects of climate change is to protect and expand forests. Education is therefore of utmost importance for communities to understand the importance of forest conservation and proper cultivation. It is important to bring their attention to practical benefits provided by forests. Efforts should therefore be geared towards ecological sustainability that also allows for regulated economic gain. We need to consciously safeguard our forests. Our future depends on them.