

Sustainable energy sources could save the dwindling forests of Liwonde-Mangochi Protected Area Complex, Southern Malawi



1. Key Messages



High dependency on forests for energy (95 %) and low provision of alternative energy sources is leading to deforestation in the Liwonde Mangochi Protected Area Complex, Southern Malawi, (Picture 1: a man cutting a whole tree for firewood, by Clement Chillima, Forestry Research Institute of Malawi (FRIM))

Government, private sector and NGOs should support and promote fuel efficient and sustainable technologies such as clay stoves and solar for people living around Liwonde-Mangochi protected area complex (Picture 2: a simple fuel efficiency clay stove, by Mathews Tsirizeni, LEAD-CHANCO)



The private sector and other stakeholder should collaborate with Government to strengthen co-management of natural resources in the Liwonde-Mangochi Protected Area Complex to address encroachment and poaching (picture 3: Poachers found with game meat, by Lynn Clifford - WAG, Salima)



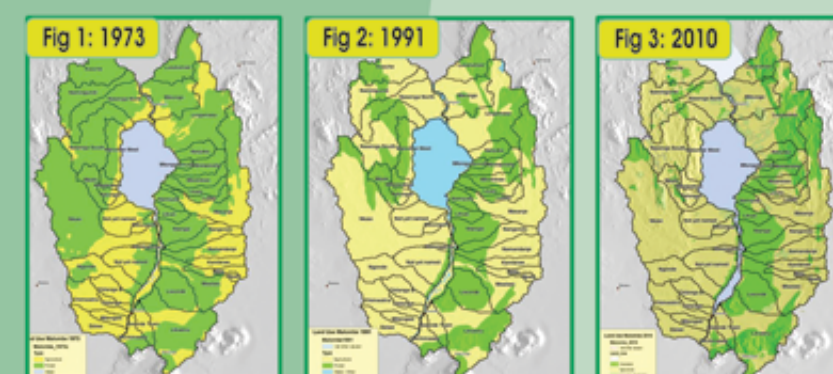
2. Introduction to Participatory Geographic Information System Project

Forestry resources are critical in supporting livelihoods through the provision of both wood and non-wood forest products such as fuel wood, poles, honey, fruits and mushrooms. Forests also provide ecosystem services through carbon sequestration, water retention, soil erosion control and nutrient cycling. Forest degradation and deforestation undermine the ecosystem services as experienced in Liwonde -Mangochi protected area complex.

LEAD Southern and Eastern Africa, with funding from Canadian International Development Research Centre (IDRC), has implemented a research project (2010-2013) in Liwonde-Mangochi Protected Area complex through the use of Participatory Geographic Information System (PGIS). The main objective of the research is to assess the access and use of water and forestry resources for food security enhancement.

3. Participatory Geographic Information System (PGIS) Research findings

The research findings have shown that communities benefit from forests through firewood, thatch grass, poles bamboos fibre, mushrooms, fruits, palm leaves and medicinal plants. Fuel wood is the major source of energy for all rural communities in the LMPAC with 95 % dependency.



Around Lake Malombe the area under forest cover has declined significantly since 1973 (green areas in figures 1, 2 and 3 above) due to expansion of area for under cultivation and settlement (yellow areas in figures 1, 2 and 3 above). The most affected of all are Mangochi Palm forest, Namizimu and Mangochi Forest Reserves (Figures 1, 2 and 3: maps of Mangochi protected area complex processed from satellite images, by Mathews Tsirizeni - LEAD CHANCO).

This deforestation leaves most of the land bare, which accelerates soil erosion estimated at 20 metric tonnes per hectare per year resulting in loss of soil fertility and poor crop yields (Government of Malawi, 2010). The area around western part of Lake Malombe has been experiencing floods for a decade now due to catchment degradation and this also contributes to crop and infrastructure loss.



Picture 5: Road washed away by floods at Chimwala area, West Lake Malombe, Mangochi district by Sosten Chiotha (LEAD CHANCO)

4. Current interventions

District Councils, NGOs and Private sector are supporting afforestation projects in the study region while Government still manages main forest reserves of Namizimu, Mangochi and Liwonde. Government is also engaging communities in co-management of Liwonde Forest Reserve and Liwonde National Park, which allow surrounding communities to access firewood and non-wood products like mushrooms, caterpillars, thatch grass and beetles (Picture 6: A community nursery at Changali village, Mangochi, by Mathews Tsirizeni - LEAD CHANCO)

5. Recommendations

This research has shown that 95% of people in the Liwonde - Mangochi Protected Area Complex depend on forests for their energy demands. This policy brief recommends the following for immediate action:

- Investment in renewable energy technologies like solar cookers, affordable fuel efficient clay stoves and rural electrification.
- Investment in fast growing exotic and indigenous (e.g. Mithethe "Acacia polycantha") tree species for community fuel wood reserves and for sustainable charcoal production

Research Team

Professor Sosten Chiotha is the Regional Programme Director for LEAD Southern and Eastern Africa & Research Coordinator for PGIS Research Project



Mathews Tsirizeni is the Project Manager for PGIS Project and Assistant Research Coordinator

Several Senior Research Scientists have contributed to the success of this 3 year research project and these include Dr. Lucy Binauli, Dr. Levison Chiwaula, Dr. Zuze Dulanya and Dr. Lawrence Kazembe (From Chancellor College); Gibson Mphemo, Welton Phalira & Clifford Mkanthama (From LEAD); Dr. Geoffrey Chavula (from Poly) and Ivy Gondwe, Nyuma Mughogho & Stella Gama (from Department of Forestry).

Contacts: Leadership for Environment & Development - Southern and Eastern Africa, Chancellor College, Zomba. E-mail: lead@cc.ac.mw; phone: 01 524 251/526 059; Website: www.leadinfrica.org/leadsea