

## **RE: AAP African Futures Program Mentor PROPOSAL, 2020/21**

Leo Zulu, Geography, Environment, and Spatial Sciences, February 24, 2020

**Background:** The interested mentee on this program is expected to work with Dr. Dr. Leo Zulu on the natural resources component of the **Malawi Policy Agenda for the Transformation of Agriculture (MwAPATA)**, a new project being launched in March 2020. Under which Michigan State University has partnered with the Foundation for a Smoke-Free World (FSFW), the Malawi National Planning Commission and the Lilongwe University of Agriculture and Natural Resources LUANAR to establish MwAPATA Institute, a self-sustaining Malawian agricultural policy research institute meant to provide first-rate policy advice to relevant stakeholders in the agricultural sector to respond effectively to urgent core challenge of declining international demand for tobacco. The broader goal is to transforming Malawi's agriculture and export economy away from current heavy dependent on tobacco, toward alternative crops and value chains. MwAPATA is expected to fight broader major challenges of rampant rural poverty, malnutrition, growing food insecurity (more than 6.7 million in 2016-17), sustainable energy supply, and social exclusion in ways that foster environmental sustainability.

Natural resources management is a critical component of the search for alternative agriculture value chains while sustaining the ecological and natural resources base for sustainable agriculture production and support for the livelihoods of poor rural farmers living in tobacco growing areas of Malawi. Most of the tobacco growing area have been heavily deforested, and wood supply is in critical deficit. Tobacco farmers need wood for poles for constructing drying sheds, and for cooking and heating energy for their households. In Malawi, 98% of the cooking energy is from woodfuels, and for rural areas, virtually all the cooking fuel id from firewood. Recent studies have also linked woodfuel availability to nutrition and food security. In particular, worsening wood shortages limit poor households from cooking fuel-demanding but nutrient rich foods such as beans, a major source of protein, and limit the number of cooked meals per day. Fish also needs fuelwood to cure, which helps to extend the shelf life and enable the product to be moved long distances away from the lakes, rivers and floodplains as a major source of protein among Malawians. With the growing scarcity of wood, sustainable wood production for poles, firewood, and charcoal production can be an important source of livelihood.

Dr. Zulu's work in MwAPATA will focuses on broader dynamics of natural resources management that are needed to support the agricultural transformation vision of the Malawi government shared by MwAPATA. This work builds on Dr. Zulu's previous research, including past and ongoing collaborative work supported by the Alliance for African Partnership (AAP) to examine energy security and sustainability livelihoods in southern Africa focusing Malawi and Zambia with MSU colleges, LUANAR and Indaba Institute and University of Zambia. This work has been extended to assessing the acceptability and scalability of an advanced, highly efficient and clean micro-gasifier cookstove that uses briquettes in Kasungu, one of the heady tobacco producing areas to promote environmentally sustainable energy security.

The program fellow will work with Dr. Zulu, MwAPATA fellows and selected collaborators in Malawi on the goals of promoting sustainable natural resources management in Malawi's tobacco growing areas. The research examines questions such as understanding the nature and extent of agrarian and land use/cover changes that have taken place in the study sites over the last two decades using available digital land-cover products from remote sensing data; the nature, qualitative flows, and spatial extent of value chains for woodfuels (firewood and charcoal) and poles and other wood products and the main actor and supply challenges; and opportunities for sustainable commercial wood and bamboo production at household and farm level to enhance sustainable supply of wood and woodfuels, energy security, and livelihoods, focusing on emerging commercial farmers? Research will run for 2.5 years, focusing on investigating the decision-making processes of these emerging and commercial (estate) farmers with significant amounts of planted or indigenous trees and land, and their willingness to invest in wood/bamboo production mixed methods (focus groups, key informant interviews, household surveys).

**Mentee Research Opportunity and Expectations** (Research, teaching and outreach). The mentee is having the opportunity to participate in research activities planned for the latter part of year 1 and the first half of year 2 – literature review, analysis of initial data to be collected this summer from focus groups and key informants on decision-making processes and willingness to invest ins sustainable wood and bamboo production, and has the opportunity to participate in data collection second summer on choice for land use allocation and wood/woodfuel value chains. The mentee will also co-author the first publication manuscript form the first part of data collection and have the opportunity to present results on MSU and home campus, one nationally in the US and possibly one in Malawi. Additionally, the fellow will have the career developmental teaching opportunity to give guest lectures in my undergraduate classes and to help facilitate and participate in selected sessions of my people/environmental geography graduate seminar. Mentoring will be based on a structured mentoring program as requires in my department, co-developed with the mentee and the home institution mentor. The mentee will also have the optional opportunity to start developing or co-develop a project proposal concept to advance their grant writing and potential to seek funding for research. The priority AAP research area is water, energy and environment.