



Enhancing Tanzania's Agri-Sector: Training Extension Officers to Address Soil Acidity.

The SAGCOT Centre and the Tanzania Agricultural Research Institute organized pivotal workshops across Tanzania's Geita and Songwe regions to transform agricultural practices into more sustainable ones. These sessions, held from April 16th to 21st in Geita and April 22nd to 24th in Songwe in 2024, brought together extension officers and agro-dealers. The workshops were designed as Training Trainers sessions to equip these critical stakeholders with the knowledge and tools to advance sustainable agriculture in their communities.

The workshop in Geita was inaugurated by Hon. Herman P. Matemba, Acting Geita Regional Administrative Secretary, who emphasized the importance of disseminating the soil health message and showcasing viable solutions.

This collaborative endeavour between the SAGCOT Centre and TARI aims to elevate agricultural productivity in the Geita and Songwe regions by empowering extension officers with essential soil management techniques. The workshop focused on educating these officers about the optimal application of lime to mitigate soil acidity, a formidable challenge to crop yields in many parts of Tanzania.

The workshops build upon the success of shotgun trials conducted in the Lake Zone in 2023. These trials revealed that applying lime to the soil can significantly increase maize and bean yields. In Geita, for example, farms that applied lime saw their harvests jump from 5 sacks per acre to 15 sacks per acre.

At the core of these workshops was a focus on addressing soil acidity, a pervasive challenge in Tanzania's agricultural landscape. With the draft National Lime Application Guideline as their compass, thirty experts from each region's public and private sectors immersed themselves in an intensive three-day training regimen. The sessions encompassed theoretical insights and practical demonstrations, providing participants a holistic understanding of soil sampling procedures and lime application techniques.

Empowering Champions for Change: According to Adam Ndatulu, Cluster and Partnership Specialist at SAGCOT Centre, the overarching objective of these workshops was to cultivate champions who would advocate for the practical implementation of soil management techniques. By empowering extension officers and agro-dealers with the requisite knowledge and skills, the initiative aimed to bolster support for small and medium-scale farmers and align with national strategies for acid soil management.

Collaborative Endeavors: In Geita and Songwe, participants delved into soil testing and lime application practices, recognizing the pivotal role of soil health in enhancing agriculture productivity in the region.

Unlocking Agricultural Potential: The findings from previous shotgun trials in the Lake Zone underscored the potential for increased productivity in maize and bean cultivation. However, the acidic nature of the soil posed a significant impediment to farmers. The initiative sought to mitigate this challenge by integrating lime application practices and unleashing the land's full potential.

A Unified Commitment to Change: The workshops culminated in a vibrant atmosphere, with forty extension officers from thirty wards actively engaged in knowledge-sharing and capacity-building activities. The presence of agro-dealers further emphasized the collaborative spirit driving the initiative forward.

Addressing Lime Distribution Challenges

Dr Sibaway Mwango, National Coordinator for Agricultural Natural Resources Management (TARI-Mlingano), emphasized the importance of identifying suitable locations for lime application, stating: "There are appropriate locations for applying lime and withholding it, the suitable fertilizers for specific areas, and those unsuitable for certain regions."

Empowering Farmers Through Training Programs: Dr Mwango highlighted the success of field trials training programs conducted in Geita and Mbozi districts: "We have conducted training programs in the Geita and Mbozi districts involving field and extension officers. This was prompted by the challenge of motivating farmers, who have been encouraged by the positive outcomes of these trials."

Overcoming Accessibility Barriers: Dr Mwango highlights a significant challenge: the lack of lime availability in Geita district through conventional agro-dealers. To address this, he emphasizes: "During these training sessions, involving input suppliers to expose them to this lime distribution opportunity was crucial, ensuring its accessibility to farmers."

Encouraging Investment in Agricultural Lime : Recognizing Tanzania's abundance of agricultural lime sources, Dr Mwango calls upon investors to explore opportunities in this sector, stating: "Apart from

agro-dealers, Tanzania has numerous agricultural lime sources, and we encouraged investors to explore investment opportunities in this sector to make lime readily available to farmers."

Dr Mwango highlighted the importance of strategic planning and collaboration in ensuring farmers access essential agricultural inputs. Tanzania can unlock its agricultural potential and promote sustainable development in rural communities by addressing distribution challenges and encouraging investment in critical sectors like agrarian lime.

These training sessions are essential, and we have discovered that many field officers previously lacked adequate knowledge of lime. However, they have gained valuable insights to train farmers on proper lime application techniques and overall soil health management practices."

GAIA Initiative: The training sessions conducted in Geita and Songwe were integral components of the implementation of the Guiding Acid Soil Management Investment in Africa (GAIA) initiative in Tanzania, an International Project Funded by BMGF through CIMMYT Harare and implemented in Tanzania by TARI Mlingano, TARI Uyole, TARI Ukiriguru, and SAGCOT Centre, among others to spotlight and combat this issue extensively.

Expert Insights: "Soil acidity remains a significant impediment to agricultural productivity," according to Dr Joel L. Meliyo, the National Project Coordinator of GAIA in Tanzania. "We're grappling with a magnitude of acid soil problem pervasive in all high rainfall areas." The severity of the issue in Tanzania is stratified into three categories: highly acidic soils with pH values from 3.6 to 4.4, very strongly acidic soils with pH between 4.4 and 5.0, and strongly acidic soils falling in the 5.1 to 5.5 range. He emphasized, "The soils with pH values greater than 5.5 and less than 8.5 do not pose significant problems for crop growth and are hence not considered in this discussion."

Dr. Meliyo expressed optimism about managing soil acidity through lime application, noting its potential based on recent field experiments in Kenya, Rwanda, and Tanzania. These trials demonstrated maize yield increases from 4% to 14% in the first season. Additionally, farmers in Iringa saw their maize production rise from 3 to 8 tons after adopting lime application. Dr. Meliyo highlighted that further studies suggest even more significant yield improvements, with potential annual increases of up to 25%, depending on the lime application rate and method. These findings indicate promising prospects for enhancing agricultural productivity through effective soil management technique.