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Policy Brief:

PROMOTING SAFE TRADE IN SOUTHERN AFRICA: STEPS TO HARMONIZING GUIDELINES FOR THE REGISTRATION OF BIOPESTICIDES AND BIOLOGICAL CONTROL AGENTS

To meet the growing consumption needs of Africa's growing population and reduce the import gap for staple crops, it is crucial to intensify production systems sustainably. Integrating biopesticides into Integrated Pest Management (IPM) strategies can help farmers produce crops that meet export residue standards, extend the effectiveness of chemical pesticides, enhance worker safety, and slow down the development of pesticide resistance. Despite the potential for growth in the African biopesticides market, regulatory bottlenecks and lack of standardized guidelines hinder progress. This policy brief advocates for implementing harmonized regional guidelines for biopesticide registration in the Southern Africa region, highlighting the benefits and key processes for fast-tracking implementation to create an enabling environment for sustainable agricultural production and trade.

BIOPESTICIDES IN AFRICA: OPPORTUNITIES, CHALLENGES AND REGULATORY BARRIERS

Farmers across Africa rely heavily on conventional synthetic pesticides to protect their crops from pests, diseases and weeds. However, improper use of these pesticides can pose significant health and environmental risks, including pesticide residue concerns, pollution and the emergence of resistant pests. Additionally, climate change is exacerbating the spread of plant pests and diseases, increasing reliance on plant protection products. Concurrently, growing consumer and political pressure call for reduced pesticide use. This urgency necessitates the adoption of innovative, effective pest control solutions that balance agricultural productivity with environmental sustainability and trade facilitation.

Sustainable agricultural production requires integrating various pest control approaches, including biopesticides and biological control agents. Biopesticides offer an innovative and environmentally sustainable approach to pest control, reducing reliance on synthetic pesticides while ensuring compliance with international trade standards. They serve as an effective alternative to highly toxic chemicals and can complement conventional pest management strategies.

When incorporated into Integrated Pest Management (IPM) strategies, biopesticides can ensure that farmers are able to produce crops that not only help them meet residue standards in various export markets but also extend the effectiveness of chemical pesticides, enhance worker (spray applicator) safety, and slow down rates of pesticide resistance development. Biopesticide usage (particularly for late-season pests) has great potential to reduce residue levels in harvested produce as they would allow chemical residues time to decline to acceptable levels while they continue providing pest control until harvest.

Despite the potential for growth in Africa's biopesticides market (Mordor Intelligence, 2024), the sector still grapples with several barriers including inefficient and unpredictable approval processes, lack of harmonized regulations across countries, outdated regulatory frameworks designed for synthetic pesticides, and approval and efficacy testing procedures misaligned with international best practices (Fenibo et al., 2023).

Why are biopesticides unique?

Biopesticides differ from synthetic pesticides because they are derived from natural sources and generally do not leave residues. As a result, they are exempt from pesticide Maximum Residue Limits (MRLs) in trade. MRLs refer to the highest legally permitted concentration of a pesticide residue in or on food and feed of plant or animal origin when a plant protection product is used correctly.

THE NEED FOR AN ENABLING POLICY AND REGULATORY FRAMEWORK

The successful commercialization of biopesticides requires an enabling policy and market environment that incentivizes private investment, reduces transaction costs, and facilitates both in-country and regional trade. Regulatory mechanisms ensure biopesticides meet human health, environmental and efficacy requirements before market entry. Assessments conducted by CABI indicate that countries with customised regulatory frameworks have more registered biopesticide products than those applying the same requirements as conventional pesticides.

However, regulatory discrepancies across Southern African Development Community (SADC) countries create barriers to market access, innovation and sustainable pest management. These uncertainties discourage investment in product development, ultimately increasing costs for end users, particularly smallholder farmers.

IMPACT OF REGULATORY INCONSISTENCIES ON TRADE

Disparities in SADC regulations negatively impact import-export transactions. The SPS Agreement of the World Trade Organization (WTO) ensures food safety and plant health regulations which protect human, animal and plant life while minimising unnecessary trade restrictions. Harmonization could help countries address SPS-related trade barriers, particularly those linked to pesticide residue standards.



THE STDF/PG/694 PROJECT AND DEVELOPMENT OF HARMONIZED GUIDELINES

To address these challenges, the STDF/PG/694 project developed harmonized guidelines for registration of biopesticides and biological control agents in the SADC region. The project was funded by the Standards and Trade Development Facility (STDF), and implemented by the International Centre for Genetic Engineering and Biotechnology (ICGEB) in collaboration with the Southern Africa Pesticides Regulators Forum (SAPReF) and other partners. These guidelines, developed over three years by regulatory experts, follow principles outlined in the STDF Guide on Good Regulatory Practices (2021) and have been presented to the SADC Plant Protection Technical Committee for further processing.

The SADC guidelines aim to ensure harmonized data requirements, scientific evaluations, decision-making and post-registration processes with regard to the registration of biopesticides in order to provide an acceptable level of protection of human, animal and plant health, and the environment in the SADC Member States. Additionally, they aim to:

- Provide farmers in the SADC Member States with safer and efficacious biopesticides products and for pest control.
- Provide SADC Member States with a harmonised framework for expediting the registration of biopesticides.
- Facilitate mutual recognition and data sharing among SADC member states for the registration of biopesticides.
- Promote the implementation of best agricultural and regulatory management practices for agricultural pest control.

REDUCING BARRIERS TO MARKET ACCESS AND INNOVATION

A harmonized regulatory framework would reduce fragmentation in requirements, which currently hinders biopesticide trade and adoption. Without harmonization, companies must navigate a complex patchwork of regulatory systems, each with different requirements, timelines and costs. This inconsistency raises compliance costs, delays market access and limits farmers' ability to use safer pest management tools. A regional approach would streamline processes, cut costs and facilitate quicker access to biopesticides, encouraging innovation and expanding pest control options.

Additionally, harmonization would allow SADC member states to share regulatory resources, improving oversight and management.



STRENGTHENING REGIONAL COOPERATION AND KNOWLEDGE-SHARING

Given the diverse economic and regulatory capacities of SADC countries, harmonization enhances collaboration and knowledge exchange.

Aligning standards fosters cooperative efforts in biopesticide research and development, leveraging expertise across borders to improve efficacy and safety. This approach allows resource-limited countries to benefit from the technical support of more developed nations in the region.

ENHANCING TRADE AND GLOBAL MARKET COMPETITIVENESS

Harmonized guidelines could facilitate intra-regional trade by ensuring biopesticide products registered in one SADC country can be more easily exported to others without additional trials or assessments. This would create a larger, unified market, boosting intra-regional trade, which accounted for about 25% of total regional trade in 2022. A streamlined regulatory process could also enhance the region's participation in the global biopesticide market. Increased alignment would attract investment, enhance market

competitiveness and accelerate adoption in agriculture.

Beyond regional benefits, harmonization would improve compliance with international trade standards, particularly those set by the European Union (EU) and the United States. This would enhance the competitiveness of agricultural producers in SADC countries, supporting their participation in global value chains and driving economic growth and sustainability.

KEY TAKEAWAYS

Biopesticides in IPM: Biopesticides complement chemical pesticides in Integrated Pest Management (IPM) by reducing pest resistance, minimizing chemical residues and promoting biodiversity while enhancing agricultural sustainability.

Regional harmonization in SADC: Aligning biopesticide regulations across SADC countries can lower trade barriers, cut compliance costs, accelerate market access, boost intra-regional trade and improve.

'ESSENTIAL ACTIONS FOR STAKEHOLDERS ON DOMESTICATING AND IMPLEMENTING HARMONIZED BIOPESTICIDE GUIDELINES ACROSS THE SADC REGION

- Secure political commitment and formal endorsement
 - SAPReF to continue its engagement with high-level decision-makers (e.g., ministers of agriculture, health, trade and environment) to secure regional approval of the guidelines.
 - SADC governance structures to facilitate formal adoption.
- Align national laws and regulations.
 - Lawmakers, regulatory agencies and legal experts to draft necessary legislative amendments to incorporate provisions of the guidelines into national regulatory processes.
 - SADC national governments to ensure legal and policy alignment with harmonized guidelines.
- Establish national coordination mechanisms.
 - SADC countries to set up multi-stakeholder committees with representatives from agriculture, trade, health and environment sectors to coordinate implementation efforts.

- Strengthen regulatory capacity
 - SADC regulatory authorities to build capacity for efficient assessment and approval of biopesticides.
 - Training institutions and experts to provide targeted training to key personnel to enhance regulatory processes and compliance.
- Foster multi-stakeholder collaboration
 - Regulatory agencies, policymakers and industry stakeholders to engage in cooperative efforts to promote the adoption and integration of biopesticides into national IPM programs.

Harmonizing regulations and mitigating pesticide residues in the SADC region: STDF Regional Project in Southern Africa

Integrating biopesticides with conventional products in well-structured Integrated Pest Management (IPM) programmes supports safe trade and environmental protection.

Biopesticides can help mitigate challenges related to pesticide Maximum Residue Limits (MRLs) in agri-food trade while enhancing sustainability and ensuring consumer food safety.

RESULTS HIGHLIGHTS:

- Developed draft harmonised guidelines for biopesticide registration and roadmaps for their adoption in five countries.
- Trained 35 regulatory officials on implementing guidelines.
- Coached 30 scientists on pesticide residue decline assessment and biopesticide-based mitigation strategies.
- Organised 15 dialogues, including a continent-wide meeting and five in-country workshops, fostering direct engagements with 534 individuals.
- Demonstrated that replacing the final application of certain chemical pesticides with biopesticides in mango and avocado cultivation maintains effective pest control while reducing pesticide residues by up to 50%, thereby aiding compliance with residue standards.
- Developed 7 knowledge products, including factsheets and GAP guides for managing anthracnose fungi and false codling moth.
- Created a toolkit for assessing the effectiveness of biopesticides in IPM programs and contributed biopesticide registration data from four countries to the CABI Bioprotection Portal for easier grower access.



Find out more: <https://standardsfacility.org/PG-694>

References:

Fenibo, E. O., Christian, R., & Matambo, T. S. (2023). Biopesticide commercialization in African countries: Successful case studies. In *Development and Commercialization of Biopesticides* (pp. 297-328). Academic Press. <https://doi.org/10.1016/B978-0-323-95290-3.00006-6>

Mordor Intelligence. (2024). MEA Biopesticides Market Size & Share Analysis - Growth Trends & Forecasts (2025 - 2030). Retrieved from <https://www.mordorintelligence.com/industry-reports/middle-east-and-africa-biopesticides-market>

Standards and Trade Development Facility. (2021). Good regulatory practices to improve sanitary and phytosanitary measures: A practical guide. Retrieved from https://www.standardsfacility.org/sites/default/files/STDF_GRP_Guide_EN.pdf

The **CABI BioProtection Portal** is the largest free global resource providing users with registered biocontrol and biopesticide products in their country and information on how to use them. It aims to help growers and agricultural advisors identify, source and correctly apply these products against problematic pests in their crops. The Portal is available (online and offline) in English and local languages, and on smartphones, tablets and desktops. ICGEB is one of the sponsors of the portal while STDF is an associate member. Find out more: <https://bioprotectionportal.com/>



About the Standards and Trade Development Facility (STDF)

The Standards and Trade Development Facility is a global partnership to facilitate safe trade that promotes compliance with international standards for food safety, animal and plant health. The STDF creates and disseminates good practices and knowledge on cross-cutting topics, and develops and delivers innovative and collaborative safe trade projects.



About the International Centre for Genetic Engineering and Biotechnology (ICGEB)

The International Centre for Genetic Engineering and Biotechnology is an intergovernmental organization dedicated to research, training and technology transfer in the field of Life Sciences and Biotechnology. ICGEB mission is to combine scientific research with capacity enhancement, thereby promoting sustainable global development.

