

Pesticide Regulation in Uganda: Protecting Health, Environment, and Agricultural Trade

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Executive Summary

Pesticides play a critical role in enhancing agricultural productivity by protecting crops from pests and diseases. However, their increased use, particularly of Highly Hazardous Pesticides (HHPs), poses significant risks to human health, biodiversity, and environmental sustainability. Globally, pesticide use has risen sharply, and Uganda reflects this trend, with volumes increasing from 2990.23 tonnes in 2010 to 6,009.78 tonnes in 2022, alongside a substantial rise in import value from 32.57 million USD in 2010 to 75.87 million USD in 2022 (FAOSTAT, 2024). Alarming, 47.8% and 68.6% of the legally registered active ingredients and brands of pesticides, respectively in Uganda meet the Pesticide Action Network (PAN) Criteria for HHPs (PAN, 2021), while 15.6% and 19.2% of the legally registered active ingredients and Pesticide brands, respectively, meet the Joint Monitoring of Pesticide Management (JMPM) criteria for HHPs (JMPM, 2008). These HHPs are linked to cancer, genetic mutations, endocrine disruption, reproductive toxicity, toxic to aquatic life, persistent in water and soil and toxic to pollinators (FoSCU, 2024).

Despite the existence of the Agricultural Chemicals (Control) Act, Cap. 35 (As Amended), Uganda's regulatory framework remains weak due to gaps in implementation and enforcement, and the limited enforcement capacity. In 2024, the Agricultural Chemicals Control Board was dissolved and its functions were transferred to the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to allow effective monitoring and enforcement of agricultural chemicals in Uganda.

The trade and use of HHPs highly affects low and developing countries for instance Uganda faces significant losses due to counterfeit agrochemicals, pesticide mismanagement, and non-compliance with international standards, including export rejections. The health risks associated with HHPs are severe, particularly among small scale farmers, women, children, and plantation workers. Exposure can lead to acute poisoning, long-term illnesses, and developmental disorders. Environmentally, HHPs contribute to soil degradation, water contamination, and biodiversity loss, ultimately undermining agricultural sustainability and resilience (Route to food, 2022, 2023).

To address these challenges, Uganda must adopt a progressive and comprehensive approach to HHPs. This includes fast-tracking the development of regulations under the Agricultural Chemicals (Control) Act, Cap. 35 (As Amended) and the Post Registration Guidelines, enhancing awareness efforts, restricting or banning all HHPs, and promoting agroecology as a sustainable alternative.



Introduction

A pesticide refers to any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth.¹ Pesticides are a key agricultural input needed to protect seeds and safeguard crops from unwanted plants, insects, bacteria, fungi and rodents.² They can have negative health and environmental impacts through contamination of soil, water and non-target plants and animals, hence decreasing biodiversity and harm living organisms including humans.

Globally, in 2022, total pesticides use in agriculture was 3.70 million tonnes (Mt) of active ingredients, marking a 4 percent increase with respect to 2021, a 13 percent increase in a decade, and a doubling since 1990.³ In comparison with the 1990s, the global application of pesticides increased by 121 percent for herbicides, 54 percent for fungicides and bactericides, and 48 percent for insecticides. Most of Africa's pesticides imports come from countries outside the region, and the majority of exported pesticides remain in the region.⁴

In Uganda, the total volume of pesticides has increased from 1,634 tonnes in 2000 to 6,016 tonnes in 2022.⁵ Consequently, the value of pesticides imported into the country has increased from approximately 32.57 million USD in 2010 to 75.87 million USD in 2022(FAOSTAT,2024).

Alarminglly, 47.8% and 68.6% of the legally registered active ingredients and brands of pesticides, respectively in Uganda meet the Pesticide Action Network (PAN) Criteria for HHPs (PAN,2021), while 15.6% and 19.2% of the legally registered active ingredients and Pesticide brands, respectively, meet the Joint Monitoring of Pesticide Management (JMPM) criteria for HHPs (JMPM, 2008). hazardous. These HHPs are linked to cancer, genetic mutations, endocrine disruption, reproductive toxicity, toxic to aquatic life, persistent in water and soil and toxic to pollinators (FoSCU,2024).

While pesticides play a crucial role in enhancing agricultural productivity, their use must not compromise public health or environmental integrity.

This principle aligns with international commitments such as the Rio Declaration on Environment and Development (1992) and the Wingspread Conference (1998), Basel Convention, Rotterdam Convention and the Bamako Convention all of which Uganda is a signatory.

Therefore, strict measures on the control and use of HHPs should be adopted. This requires laws and regulations that are effectively implemented to protect human health and the environment while promoting sustainable production for the present and future generation.

What pesticides are categorized as Highly Hazardous Pesticides

Highly Hazardous Pesticides (HHPs) present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems.⁶ In addition, HHPs appear to cause severe or irreversible harm to health or the environment under conditions of use in a country.

The exposure to HHPs is mainly during handling, dilution, mixing, and application by inhalation.⁷ It may also be ingested through consumption of contaminated food during work, through contact with contaminated hands or after harvest of the food. Contaminated clothing is a significant source of exposure and bystanders might be exposed to the sprayed pesticides dermally, via inhalation or by use of the disposed containers.

HHPs may be identified as carcinogens (agents that can induce cancer), mutagens (substances that can cause genetic mutations), or reproductive toxicants (compounds linked to adverse reproductive outcomes such as infertility, impotence, miscarriage, still births, menstrual irregularities or developmental defects). Some HHPs act as endocrine disruptors, interfering with hormonal regulation, while others exhibit pronounced toxicity to pollinators, including bees, or aquatic organisms. Furthermore, some HHPs demonstrate environmental persistence, thereby posing prolonged ecological risks.

1 FAO & WHO, 2014. The International Code of Conduct on Pesticide Management.

2 FAOSTAT Analytical Paper 109. Pesticide Use and Trade, 1990-2023.

3 Food and Agriculture Organisation of the United Nations, FAOSTAT Analytical Brief 89: Pesticides Use and Trade 1990-2022. Accessed via: <https://openknowledge.fao.org/server/api/core/bitstreams/a8a8c2c8-ee36-42e8-a619-7e73c8daf8a6/content#:~:text=to%20total%20insecticides.-,GLOBAL,25%20percent%20to%2022%20percent>.

4 Food and Agriculture Organisation of the United Nations, FAOSTAT Analytical Brief 89: Pesticides Use and Trade 1990-2022. Accessed via: <https://openknowledge.fao.org/server/api/core/bitstreams/a8a8c2c8-ee36-42e8-a619-7e73c8daf8a6/content#:~:text=to%20total%20insecticides.-,GLOBAL,25%20percent%20to%2022%20percent>.

5 FAO Statistical YearBook 2024 Available on <https://www.evalforearth.org/sites/default/files/2024-11/STATISTICAL%20YEARBOOK%20FAO%202024.pdf>

6 International Code of Conduct on Pesticide Management

7 WHO, Preventing Disease Through Healthy Environments: Exposure to Highly Hazardous Pesticides: A Major Public Health Concern.

Legal, Regulatory, and institutional frameworks governing HHPs

The National Environment Act Cap. 181, Section 3(1) provides that every person has a right to a clean and healthy environment. It provides under Section 2(2)(a) that the National Environment Authority shall assure all people living in the country the fundamental right to an environment adequate for their health and well-being as a principle of environment.

The Agricultural Chemicals (Control) Act Cap. 35; aims to control and regulate the manufacture, storage, distribution, and trade in, use, importation and exportation of agricultural chemicals and for other related matters.

In 2024, the parliament of Uganda passed the Agricultural Chemicals (Control)(Amendment) Act, 2024 to mainstream the functions of the Agricultural Chemicals Board into the Ministry responsible for agriculture in order to give effect to the government policy on Rationalisation of Government Agencies and Public Expenditure. As a result, all the functions of the board are now under the Ministry of Agriculture Animal Industry and Fisheries (MAAIF). This therefore mandates the Ministry to inform the general public on the mode of operation arising from these changes through developing Guidelines and Regulations.

The Act under section 15 provides for less punitive penalties for the offences stipulated. Owing to the health and environment impacts, the offences should be punitive to restrict the trade in, use, and distribution of highly hazardous pesticides. There is a need to cure the clerical error under section 15(1), which provides for a person contravening section 2 and yet this is a definition section and not subjected to creating an offence.

Generally, the law requires Regulations for its effective implementation and enforcement. As required under Section 18 of the Agricultural Chemicals (Control) Act Cap. 35 requires the Minister to develop relevant regulations. Section 3 also requires the regulations on manufacturing, packaging, store, display, distribute, transport, possess, use or advertisement of agricultural chemicals and section 4 also requires regulations for the import, export and sale of agricultural chemicals. The available Regulations (The Control of Agricultural Chemicals (Registration and Control) Regulations S.I 29-1) were developed under the repealed law thus the need for updated regulations to operationalize the Agricultural Chemicals (Control)(Amendment) Act, 2024.

There are opportunities to further strengthen the regulatory landscape as provided under the National Development Plan IV that focuses on the development of the Regulations and Guidelines under the Agricultural Chemicals (Control) Act.

The economic impact of hazardous pesticides

Multinational corporations continue to make significant investments and reap substantial profits from the production and global distribution of hazardous pesticides. However, these gains are accompanied by significant public health, environmental, and economic costs. Despite annual expenditures to manage the health and environmental impacts of pesticide use, these efforts fall short of reversing the irreversible damage inflicted on ecosystems and human health.

In 2019, the European Union (EU) approved over 450 active pesticide ingredients, with exports generating USD 5.8 billion that same year (Pesticide Atlas, 2022). While such figures reflect the economic significance of pesticide trade, they also highlight a troubling imbalance, where profits are privatized but the damage is socialized.

Uganda mirrors this global pattern. According to FAOSTAT (2024), the volume of agricultural pesticides used in Uganda more than doubled over 12 years, from 2,990.23 tonnes in 2010 to 6,009.78 tonnes in 2022. Over the same period, the monetary value of pesticide imports rose from \$32.57 million to \$75.87 million, with a peak of \$108.57 million recorded in 2020. Approximately 40% of agrochemicals on Uganda's market are counterfeit (FAO, 2019), leading to substantial financial losses and compounding environmental and public health risks. FAO (2020) estimates that Africa loses nearly \$4 billion annually due to pesticide mismanagement.

Uganda is vulnerable to non-compliance with the pesticide regulations. In 2020, the country lost more than \$60 million in fresh produce exports due to excessive pesticide residue levels (UBOS, 2021). These losses are not only economic but also affect Uganda's reputation in international agricultural markets.

Health and environmental implications of Highly Hazardous Pesticides

HHPs pose significant risks to human health, particularly for farmers, agrochemical handlers, and rural communities. Exposure is through direct contact during application, transportation, storage, inhalation, and consumption of food and water with residues. According to WHO, there are over 385 million unintended acute pesticide poisoning cases including 11,000 deaths, mostly in low- and middle-income countries are registered annually

worldwide.⁸

According to UNICEF, pregnant and breastfeeding mothers, children under the age of five and elderly are more vulnerable to the effects of pesticides for example, if exposed to aerially sprayed pesticides, children will inhale double the amount of an average adult.⁹ Children particularly hand to mouth behaviour are also exposed to pesticide containers, residue surfaces and through ingestion of contaminated soil. The small size of liver and kidney, the same chemical is likely to be 10 times more toxic to a child than to an adult. Studies have identified statistically significant reductions in IQ, loss of working memory, autism, attention deficit disorder, and motor coordination problems associated with exposure.¹⁰

HHPs have far-reaching and often irreversible impacts on the environment, contributing to soil degradation, water contamination, and biodiversity loss. Excessive use and misuse of pesticides result in contamination of surrounding soil and water sources, causing loss of biodiversity, destroying beneficial insect populations that act as natural enemies of pests and reducing the nutritional value of food.

This undermines regeneration and sustainability for agriculture. In Uganda, the increasing use of pesticides without adequate regulatory oversight threatens ecological integrity and exacerbates climate vulnerability within agrifood systems.

Conclusion

Uganda's agricultural sector is increasingly input intensive due to the rapid rise in the importation and use of Highly Hazardous Pesticides (HHPs). This is coupled by the weak legal and regulatory frameworks. While the Agricultural Chemicals (Control) Act provides a legal basis for regulating pesticides, effective implementation remains constrained by the absence of Regulations as provided

for under section 15. Uganda should accelerate the transition toward sustainable agricultural systems by promoting agroecological approaches that reduce reliance on hazardous agrochemicals. Therefore, a comprehensive and precautionary approach to pesticide regulation will not only safeguard human and environmental health but will also strengthen the resilience, competitiveness, and long-term sustainability of Uganda's agrifood systems.

Recommendations

- Government through the Department of Crop Inspection and Certification at MAAIF should expedite the development of Regulations under the Agricultural Chemicals (Control) Act (As Amended).
- Government through the Department of Crop Inspection and Certification at MAAIF should expedite and facilitate stakeholder engagement and consultation in the process for developing the Guidelines for Post-Registration Review of Agricultural Chemicals and the review the Pesticide residual monitoring plan as proposed under the National Development Plan IV.
- The Ministry of Agriculture, Animal Industry and Fisheries, as the principal regulatory authority overseeing pesticides through its Department of Crop Inspection and Certification, should consider banning or imposing stringent restrictions and follow-up measures on identified HHPs within Uganda's agricultural sector to safeguard consumer health and environmental integrity.
- The Ministry of Agriculture Animal Industry and Fisheries should expedite the finalization, and the passing of the National Agroecology Strategy, thereby promoting sustainable agricultural practices that reduce reliance on HHPs.

⁸ Nihash VL, Jayashree GC, et. at., (2025). Unintentional Pesticide Poisoning and Safety of the Farmers- A Review. <https://www.doi.org/10.33545/2664844X.2025.v7.i9d.765>

⁹ UNICEF, 2018. Understanding the Impacts of Pesticides on Children: A discussion paper.

¹⁰ [Impact of prenatal chlorpyrifos exposure on neurodevelopment in the first 3 years of life among inner-city children - PubMed](#)

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