



MKAAJI MPYA’s Mobile Agronomists:

Pioneers of Sustainable Agriculture and Empowerment in Rural Areas in South Kivu, DRC

Introduction

MKAAJI MPYA asbl stands out as a pioneer of agricultural innovation in rural areas of the Democratic Republic of Congo (DRC). Committed to promoting sustainable agricultural practices, the organisation focuses on reducing the use of harmful chemical fertilisers and pesticides in favour of organic pesticides and organic methods. This transition to ecological alternatives is supported by MKAAJI MPYA’s Mobile Agronomists, trained experts who work closely with rural communities, particularly rural women and indigenous peoples.

MKAAJI MPYA’s achievements are exemplified by its Rural Women’s Leadership Centres (CLEFRs) supported

by GLOBAL FEMINISM IN SOLIDARITY AND ACTION, THE CIRCLE NGO where practical training is provided in the manufacture and use of organic pesticides. These initiatives have not only improved farmers’ resilience to climate change and crop disease, but have also strengthened women’s leadership in the sustainable management of natural resources.

This detailed document explores the positive impact of MKAAJI MPYA in South Kivu, illustrating how its efforts are contributing to more sustainable agriculture and greater food security while preserving the local environment.



1 IMPORTANCE OF ORGANIC PESTICIDES ON FOOD SYSTEMS

Organic pesticides play a very significant role in promoting a sustainable food system by contributing to food security while preserving the environment. In the Democratic Republic of Congo (DRC), where agriculture is essential for subsistence and the local economy, the use of organic pesticides has a significant impact on agricultural productivity and public health.

Organic pesticides are derived from natural sources such as plants, micro-organisms and natural substances, and are often less toxic and more specific in their action than conventional chemical pesticides (Isman, 2020). This specificity reduces risks to human health and the environment by minimising non-target effects on biodiversity and non-pests.

In the DRC, where traditional agricultural practices include less sustainable pest management methods, the adoption of organic pesticides offers a promising alternative. For example, the use of neem (*Azadirachta indica*) as an organic pesticide has been shown to be effective in controlling insect pests while preserving soil health and reducing environmental impact compared with chemical alternatives (Mordue, 2021).

In addition, organic pesticides contribute to the resilience of food systems by enhancing crop resistance to biotic stresses while minimising the accumulation of chemical residues in agricultural products intended for human consumption. This is particularly relevant in the current context of growing concerns about food safety and environmental sustainability.

In short, integrating organic pesticides into food systems in South Kivu could not only improve food security by reducing crop losses, but also contribute to public health and long-term environmental sustainability.



2 SOIL FERTILISATION AND MANAGEMENT

Soil management and fertilisation are critical aspects of sustainable agriculture, and organic pesticides play a complementary role by providing solutions that promote soil health while reducing reliance on chemical inputs.

Organic pesticides, in addition to their biological action on crop pests and diseases, are also used to enrich soils as green manures and as liquid fertilisers rich in essential nutrients such as nitrogen, phosphorus and potassium (Furlan et al., 2018). For example, the use of plant-based organic pesticides such as garlic (*Allium sativum*) not only controls soil pests, but the residues after extraction are composted to enrich the soil with organic matter and nutrients, improving its long-term fertility (Chinampas-Amador et al., 2019).





This approach benefits not only short-term agricultural productivity but also environmental sustainability by reducing soil erosion and improving its capacity to retain water and nutrients (Gopal et al., 2020). In a context where soil degradation is a worrying problem, the adoption of sustainable agricultural practices such as the use of organic pesticides helps to reverse these negative trends while supporting food production in the rural areas where MKAAJI MPYA operates.

In few words, integrating organic pesticides into soil management offers a holistic approach to improving soil fertility while minimising the environmental footprint of agriculture in rural areas of South Kivu. This has been demonstrated through the Rural Women's Leadership Centres (CLEFRs) of MKAAJI MPYA asbl.

3 COMBATING CROP PESTS

Controlling crop pests is a constant challenge for farmers in South Kivu, where crop losses have disastrous economic consequences for rural communities. Organic pesticides offer an effective and environmentally friendly alternative to traditional chemical pesticides, specifically targeting pests while minimising negative effects on the environment and human health.

Organic pesticides are often derived from plants that contain active compounds with insecticidal or repellent properties. For example, pyrethrum, extracted from the flowers of certain chrysanthemum species, is widely used as a organic pesticide to control insect pests such as aphids and whiteflies (Palacios et al., 2020). This type of organic pesticide acts effectively on pests while minimising the impact on natural predators and other beneficial organisms, thus preserving the ecological balance of agroecosystems.

In addition, organic pesticides are often less persistent in the environment than chemical pesticides, reducing the risk of accumulation in soil and groundwater (Isman, 2020).

This is particularly important in agricultural regions where access to drinking water and the health of aquatic ecosystems can be compromised by excessive use of chemicals.



The integration of organic pesticides into pest management strategies in South Kivu represents a promising opportunity to improve the sustainability of agricultural practices while ensuring safe and sustainable food production.

4 CLIMATE CHANGE

Climate change poses significant challenges for agriculture worldwide, including in rural areas of South Kivu in the Democratic Republic of Congo (DRC). The adoption of organic pesticides plays a crucial role in adapting to the effects of climate change while mitigating the greenhouse gas emissions associated with conventional agricultural practices.

Organic pesticides, derived from natural sources such as plants, micro-organisms and biological substances, offer a number of environmental advantages over chemical pesticides. For example, the use of organic pesticides based on natural products such as pyrethrum or neem extract reduces the carbon footprint of



agriculture by minimising the use of synthetic chemicals and preserving local biodiversity (Mordue, 2021).

In addition, organic pesticides are often less persistent in the environment and less likely to contaminate soil and water resources than chemical pesticides, which have devastating effects on aquatic and terrestrial ecosystems (Isman, 2020). This property is essential in a context of climate change, where the sustainable management of natural resources is becoming crucial for the resilience of food systems and the protection of the environment.

Adapting to climate change also requires efficient management of natural resources, including the preservation of fertile soils and water conservation.

Organic pesticides contribute to this adaptation by improving soil health through their use as green manures and reducing pressure on water resources needed for agricultural irrigation (Furlan et al., 2018).

In conclusion, the integration of organic pesticides into agricultural practices in South Kivu represents a promising strategy by MKAAJI MPYA to mitigate the effects of climate change while strengthening the resilience of rural and farming communities in the face of growing environmental challenges.

5 SUCCESS STORIES FROM RURAL AREAS BY MKAAJI MPYA

MKAAJI MPYA asbl has demonstrated exceptional leadership in the promotion and adoption of organic pesticides in South Kivu, particularly through its Mobile Agronomists (MA) and its Rural Women's Leadership Centres (CLEFRs). These initiatives have not only transformed local agricultural practices but have also strengthened the role of women and girls in the sustainable development of the region.

MKAAJI MPYA's Mobile Agronomists are key players in the manufacture and promotion of organic pesticides. These trained professionals work directly with local farmers to teach techniques for producing organic pesticides from locally available natural resources, such as repellent plants and fungal plant extracts. Using simple, accessible methods, the Mobile Agronomists pass on the knowledge needed to make, apply and manage organic pesticides effectively on local farms.

At the same time, MKAAJI MPYA's Rural Women's Leadership Centres (CLEFRs) play a crucial role in empowering rural women and girls. These centres provide training in sustainable agriculture, including the use of organic pesticides, enabling participants to improve the productivity of their crops while reducing their reliance on expensive and potentially dangerous chemical pesticides.

In addition, the CLEFRs provide a space for knowledge sharing and capacity building, strengthening women's leadership in natural resource management and agricultural sustainability.

A concrete example of success can be seen in the chiefdom of Buhavu, Kalehe Territory, where the beneficiaries of MKAAJI MPYA programmes are reporting tangible results. The rural women trained have managed to significantly reduce crop losses through the effective use of organic pesticides, while improving soil health and local biodiversity. These successes demonstrate the positive impact of MKAAJI MPYA's interventions in promoting sustainable agricultural practices and empowering rural women across South Kivu.





In conclusion, the innovative initiatives of MKAAJI MPYA asbl, such as the Project for the socio-economic empowerment of rural women and girls who are victims of sexual and gender-based violence in and around mining sites in South Kivu, and the organic pesticides and agricultural empowerment of rural communities Project: Increasing the initiatives and community involvement of the Mobile Agronomists of MKAAJI MPYA in South Kivu, DRC, which is in its pilot phase, demonstrate the value of the Mobile Agronomists (MAs) and Rural Women's Leadership Centres (RWLCs) supported by [THE CIRCLE NGO](#). These programmes are tangible examples of how organic pesticides can not only improve food security and promote sustainable management of natural resources, but also strengthen women's leadership in rural development. In order to sustain these successes and extend their beneficial impact, it is crucial to increase the initiatives and community involvement of MKAAJI MPYA's Mobile Agronomists, ensuring wider and more effective adoption of sustainable agricultural practices in these rural areas.



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