FEASIBILITY OF ELIMINATION OF EU FORBIDDEN PESTICIDES IN SMALLHOLDER FARMS IN AFRICA

CASE STUDIES FROM KENYA AND GHANA

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1. Introduction

The European Union (EU) Commission pledged[1] in 2020 to introduce a legislative proposal banning the export of pesticides prohibited within the EU. As the public awaits the fulfilment of this pledge, more hazardous substances banned in European agriculture continue to be produced by EU-based companies and exported to developing countries. This toxic trade[2] has continued to pose serious health risks to farmers, farmworkers and the environment in the global south, while boomerang effect also poses health risks to European consumers through imported foods. According to the 2023 EU report on pesticide residues in food[3] from the European Food Safety Authority (EFSA), almost one in ten food samples tested in the EU contains residues of EU banned pesticides. Among the most frequently detected banned pesticides were the insecticides Imidacloprid, Thiamethoxam/Clothianidin, Chlorpyrifos, Bifenthrin and the fungicides Carbendazim/Benomyl and Flutriafol. Many of these are classified as Highly Hazardous Pesticides (HHPs) by the UN's Food and Agriculture Organisation (FAO) because they are considered carcinogenic, mutagenic, or toxic to reproduction. The contamination was particularly high in imported products like bananas, tea, rice, okra and spices. The highest contamination rates were found in foods imported from Rwanda, Cambodia, Madagascar, Paraguay and Bangladesh.

Meanwhile in the past seven years the EU has banned more pesticides that were previously authorised for use on European farms, after evidence emerged of the dangers they pose to human health or the environment.

The pressure for the EU to act is growing, for example in February 2025, a broad coalition of civil society organisations shared an open-letter[4] to the EU Commissioner Christophe Hansen, to uphold his commitment to ensuring that food imported into the EU meets the same safety standards as food produced within the EU. As the debate continues on the possibility of the EU banning the export of pesticides that are forbidden for use in the EU, and a parallel one on banning the import to the EU of agri-food products in which pesticides that are forbidden in the EU have been used, there is limited knowledge on the impacts these measures will have on smallholder farmers who are currently using these products.

Additionally, it is possible that the criteria that the EU uses to decide on the list of forbidden pesticides is influenced -either implicitly or explicitly- by the needs, risks

1 Hazardous chemicals – prohibiting production for export of chemicals banned in the European Union
2 Stop exporting illegal toxic chemicals! | Foodwatch EN
3 The 2023 European Union report on pesticide residues in food | EFSA
4 Stop EU's Double Standards on pesticides! | Foodwatch EN

and threats in local ecosystems; which might be different to those in some African countries. In order to inform civil society participation in that debate it is necessary to obtain evidence on the feasibility of the transition and the challenges and costs associated with it.

The Rethinking Value Chains Collective[5] funded by the FPH foundation, and coordinated by Banana Link, ReAct and the Fair Trade Advocacy Office commissioned these case studies (one on **Cocoa in Ghana** and another on **Coffee in Kenya**) to highlight some of the risks for smallholder farmers in Africa of the ban of (some of the) pesticides that are forbidden in the EU.

2. Objective

The objectives of these case studies are, to:

- Add nuances to a debate from the perspective of smallholder farmers in Africa;
- Avoid a scenario in which some actors in EU or Africa civil society might be calling for a rapid change that could negatively impact smallholder farmers in Africa;
- Ultimately inform civil society on the policy recommendations that it shall bring to EU institutions in terms of the need for exceptions, transition periods, support measures, accompanying measures, in case any ban (import ban or export ban) were proposed by the European Commission.

5 https://rethinkingvaluechains.com/

3. Methodology

The findings in this report are based on qualitative research approaches that involved face-to-face interviews, informal and formal discussions, and visual observations. Collectively these approaches helped us to gather evidence with respect to the following research questions;

- Description of the farmers and context.
- What pesticides which are forbidden in the EU are the farms using? For what purpose? Are the pesticides produced in the EU and imported to Africa or they are produced in a third country (China, US, India)
- Are there alternatives to the banned pesticides? Are they equally effective?
- Are there consequences in the cost structure of the farms? Any impact on the price at which the commodities could be sold?
- Have positive effects in biodiversity, soil health or human health been identified? Has there been a negative or positive overall economic impact?

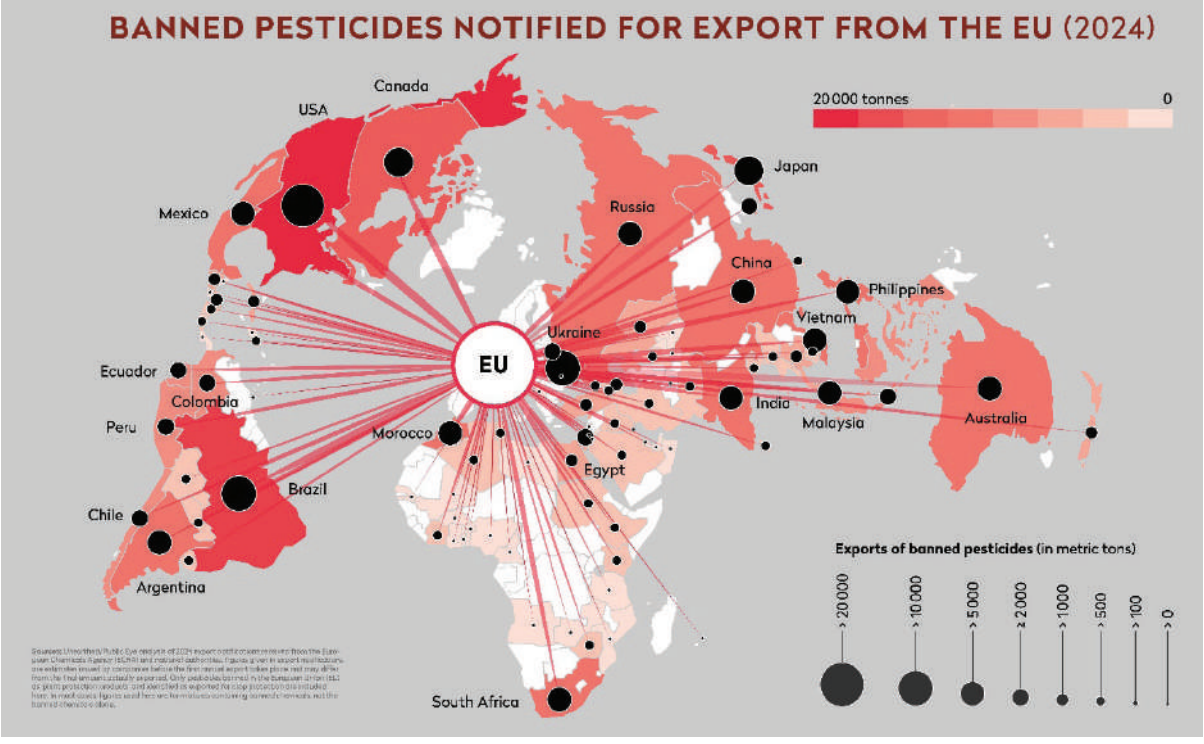
To gain a good understanding of the contexts in both case studies, we focused on four key stakeholders in each of the countries involved in the pesticides supply chain; farmers, farmer groups or cooperatives, pesticides traders or dealers, and pesticide control bodies or Government regulators. Using specially designed assessment checklists as guiding tools, each of those stakeholders were interviewed – individuals from within each of these stakeholder groups were purposively selected for the key informant interviews (KIIs).

4. Findings

4.1 Pesticides regulation in the EU

Although the EU has stricter regulations for pesticide use, EU companies have continued to produce and export banned chemicals to developing countries. The current EU Plant Protection Products (PPP) Regulation[6] governs the market distribution of active ingredients and substances, but does not extend legal oversight to their manufacturing process. This implies that, while active ingredients may not be approved under the PPP Regulation for distribution within the EU, their manufacture and export to countries with weaker regulations like Kenya and Ghana remains permissible.

According to the investigation by the Swiss nonprofit Public Eye and *Unearthed*, the investigative newsroom of Greenpeace, the export of EU banned pesticides rose from 81,600 tons in 2018 to 122,000 tons in 2024.



Source: Public Eye article of September 2025[7].

Despite several calls to address this "double standards" of exporting pesticides banned in the EU to other countries and finding their residues in imported foods, the EU has not responded swiftly. Its 2020 chemicals strategy claimed it would "lead by example, and, in line with international commitments, and ensure that hazardous chemicals banned in the EU are not produced for export".

6 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R1107
7 Banned pesticides

But five years on, the list of banned pesticides[8] has not only grown longer but the exported quantities too. Reports show that Germany, Spain, the Netherlands and France remain some of the biggest exporting countries in 2024 of banned pesticides.

To address the double standards, stakeholders are advocating for a full export ban on these pesticides and a zero-tolerance policy for their residues in all imported food products to protect public health and the environment globally.

4.2 Pesticides regulation in Kenya

Kenya is a key exporter of agricultural products to the EU, with its main exports being horticultural products like flowers and coffee, along with other items such as vegetables and fruits. Conversely, Kenya is one of the key destination countries in Africa of the exported banned chemicals from the EU. A 2024 report by PAN Europe[9] found that Kenya was among the top five exporting countries with high rates of EU-banned pesticides in food samples, alongside India, Uganda, China, and Brazil.

Following pressure from civil society organisations, the Kenyan government has recently made several steps toward addressing the double standard that allowed companies to export pesticides to Kenya that they cannot sell in their countries. On 7th May 2025, it announced a ban of over 50 pesticide products from the Kenyan market. This targeted chemicals already banned from their country of origin. Subsequently a civil society group lead by Route to Food Initiative (RTFI)[10], published a statement that called for specific actions to strengthen the pesticide withdraw process:

- Establish a multidisciplinary advisory panel of independent toxicologists, eco-toxicologists, agronomists, public health experts, farmers' representatives, and civil society organisations to review pesticide data, assess regulatory proposals, and provide evidence based, corruption free recommendations to the Pesticide Control Products Board (PCPB)11 - a statutory organisation of Kenya Government established under an Act of parliament (the Pest Control Products Act, Cap 346, Laws of Kenya of 1982) to regulate the importation and exportation, manufacture, distribution and use of pest control products.
- The responsible authorities and PCPB should establish clear, regular, and transparent mechanisms for stakeholder engagement throughout pesticide review processes. Meaningful consultation requires proactive dissemination of information through multiple accessible channels, national newspapers, radio, community platforms, and direct outreach to farmer organisations and civil society groups. Furthermore, PCPB should ensure that comprehensive documentation

8 EU Pesticides Database - Food Safety - European Commission
9 Double standards, double risk: Banned pesticides in Europe's food supply | PAN Europe
10 Press: A Landmark Decision to Ban 50 Harmful Pesticide Products
11 PEST CONTROL PRODUCTS BOARD – For Effective PCPs Regulation

- such as risk assessments, exposure data, usage statistics, and regulatory justifications - is made publicly available in a timely and accessible manner. Consultation timelines should be clearly communicated, and structured opportunities should be provided for substantive input from farmers, consumers, researchers, health professionals, and advocacy groups.

- The Ministry of Agriculture and Livestock Development to formulate specific regulations to implement the double standards provision introduced under the Business Laws (Amendment) Act, 2024. Clear and enforceable regulatory guidelines are critical to ensure this legal safeguard translates into meaningful protection for Kenyan farmers, consumers, and ecosystems. The regulations should explicitly: define the scope of double standards as it applies to pesticide registration, specifying the criteria for identifying products banned, withdrawn, or severely restricted in their countries of origin; establish robust screening protocols for rejecting pesticide products that do not meet these criteria, ensuring that Kenya does not become a dumping ground for hazardous agrochemicals banned elsewhere; and ensure consistent enforcement aligned with international conventions, such as the Rotterdam Convention on Prior Informed Consent and the FAO/WHO Code of Conduct on Pesticide Management.

- Recognising the agricultural dependency on certain pesticides, combine the withdrawal strategy with the promotion of safer, effective alternatives - including Integrated Pest Management (IPM), biopesticides, and agroecological approaches. Supporting registration and approval of safer alternatives is critical to ensure farmers access quality alternatives.

Subsequently, in June 2025, the Kenyan government announced the withdrawal of 77 harmful pesticides from the market, and others to be reviewed by the PCPB with final decisions expected by December 2025. Deeper analysis shows that the withdrawn pesticides are based on 19 active ingredients. According to the government statement, banned pesticides include high risk active ingredients such as Acephate, Chlorothalonil, Diuron, Thiacloprid, DDT, Chlordane, and Alachlor known for health risks like cancer and endocrine disruption. Among the restricted ones are the widely used compounds such as Chlorpyrifos, Dimethoate, Imidacloprid, and Abamectin, whose use has now been limited to specific, less-risky applications or crop types. 2,4-D, Amine and Abamectin though under review, they are not banned globally, but some specific formulations or uses have been banned in certain regions, such as high-volatile ester (HVE) versions of 2,4-D in Australia and some specific uses of Abamectin in the EU. Amine is a component of many herbicides, not a stand-alone product, so it is not banned on its own. The EU banned the use of Abamectin as a foliar spray in 2006, though it may still be used as a seed dresser or for soil application in some member states, according to the European Food Safety Authority.

Table 1: Active ingredients that have been reviewed and restricted after review in Kenya

NO	MOLECULE	USE	STATUS/ACTION TAKEN	EU APPROVED (Y/N)
1.	2,4-D, Amine	Herbicide	Restricted. Not for use in Coffee	Y
2.	Abamectin	Miticide	Restricted. Not for use in open fields	Y
3.	chlorpyrifos	Insecticide	Restricted for use as termiticide	N
4.	Dimethoate	Insecticide	Restricted for use as termiticide	N
5.	Imidacloprid	Insecticide	Restricted for use in non-open fields	N
6.	Omethoate	Insecticide	Restricted for use in non-edibles only	N
7.	Propineb	Fungicide	Restricted. No for use on edible crops	N
8.	Iprodione	Fungicide	Restricted. No for use on edible crops	N
9.	Oxydemeton - methyl	Insecticide	Importation stopped until review is completed	N
10.	Mancozeb	Fungicide	Reviewed, awaiting decision	N
11.	Permethrin	Insecticide	Reviewed, awaiting decision	N

According to the Cabinet Secretary (CS) for Agriculture, the goal is to align Kenya's pest control regulations with global safety standards and enhance environmental sustainability.

"We will no longer allow products that are banned internationally to be used on Kenyan soil. This is about protecting the health of our people and the integrity of our agricultural systems", said CS Kagwe.

The Kenyan government also announced that a revised Pest Control Products Bill, already approved by Cabinet, will soon be tabled in Parliament to strengthen oversight of pesticide registration and use. Key provisions include:

- Mandatory registration of pesticides in their country of origin before Kenyan approval.
- Ban on products prohibited under multilateral environmental treaties.
- Restrictions on chemicals not approved in the EU, US, Canada, or Australia.

The government will also support farmers with training and promote safer alternatives through integrated pest management strategies.

Table 2: Active ingredients and associated end-use products withdrawn from Kenyan market through regulatory decisions.

NO	MOLECULE	USE	EU APPROVED (Y/N)
1.	Acephate	Insecticide	N
2.	Chlorothalonil	Fungicide	N
3.	Pymetrozine	Insecticide	N
4.	Thiacloprid	Insecticide	N
5.	Diuron	Herbicide	N
6.	Polyethoxylated tallowamine (POE-tallowamine	Co-formulant	N
7.	Kasugamycin	Fungicide	N
8.	Pyridalyl	Insecticide	N

These recent developments have been well received by many stakeholders. However, the true measure of success will be gauged by how well implementation and enforcement will be carried out. Most widely used substances originally under contention, i.e. banned in Europe while approved in Kenya, are now withdrawn (e.g. acephate), restricted (e.g. dimethoate, imidacloprid, chlorpyrifos) or under review (e.g. mancozeb). Mancozeb is a popular fungicide on the Kenya market with at least 103 formulations, widely used especially in horticulture. Mancozeb was banned within the EU in 2021 - it is known to have an endocrine disruptor effect in humans, which means that it interferes with the hormonal system of the body, leading to reprotoxic and developmental challenges. The Kenya government indicated that it has completed the review of Mancozeb and now awaiting the decision to withdraw, restrict or ban. According to one of the new provisions in the revised Pest Control Products Bill, the decision should be to ban Mancozeb, because it is not approved in the EU.

Most of these banned or withdrawn chemicals by the Kenya government are exported by companies from Europe, India, China, or USA. With the new restriction on products not registered in their countries of origin, the expectation is that these products will gradually disappear from the local market if the import controls are strengthened. However, for products that are manufactured locally (like imidacloprid), it will likely be more challenging to clear them off the market, unless the Kenya government imposes hefty fines to the producing companies (for example Twiga and Syngenta).

Table 3: Banned pesticides in Kenya

NO	MOLECULE	USE	EU APPROVED (Y/N)
1.	2,4,5-T (2,4,5-Trichloro-phenoxybutyric acid)	Herbicide	N
2.	Chlordane	Insecticide	N
3.	Chlordimeform	Insecticide	N

4.	DDT (DichlorodiphenylTrichloroethane)	Agriculture	N
5.	Dibromochloropropane	Soil Fumigant	N
6.	Endrin	Insecticide	N
7.	Ethylene dibromide – EDB (1,2-dibromoethane)	Soil Fumigant	N
8.	Heptachlor	Insecticide	N
9.	Toxaphene (Camphechlor)	Insecticide	N
10.	5 Isomers of Hexachlorocyclohexane	Fungicide	N
11.	Ethyl Parathion	Insecticide (All formulations banned except for capsule suspensions)	N
12.	Metrilyt Parathion	Insecticide (All formulations banned except for capsule suspensions)	N
13.	Caparlot	Fungicide	N
14.	Aldrin	Insecticide	N
15.	Benomyl, Carbofuran, Thiram combinations	Dustable powder formulations containing Benomyl >7%, Carbofuran >10%, Thiram >15%	N
16.	Binapacryl	Miticide/Fumigant	N
17.	Chlorobenzilate	Miticide	N
18.	Dieldrin	Insecticide	N
19.	Dinoseb and Dinoseb salts	Herbicide	N
20.	DNOC and its salts	Insecticide, Fungicide, Herbicide	N
21.	Ethylene Dichloride	Fumigant	N
22.	Ethylene Oxide	Fumigant	N
23.	Fluoroacetamide	Rodenticide	N
24.	Hexachlorobenzene (HCB)	Fungicide	N
25.	Mercury compounds	Fungicides, Seed treatments	N
26.	Pentachlorophenol	Herbicide	N
27.	Phosphamidon	Insecticide (Soluble liquid formulations >1000 g active ingredient/L)	N
28.	Parathion	Insecticide	N
29.	Monocrotophos	Insecticide/Acaricide	N
30.	All Tributylin compounds	Includes tributylin oxide, benzoate, fluoride, lineoleate, methacrylate, naphthenate, chloride	N
31.	Chlordane	Insecticide	N
32.	Alpha-Hexachlorocyclohexane	By-product of Lindane manufacture	N
33.	Beta-Hexachlorocyclohexane	By-product of Lindane manufacture	N
34.	Mirex	Insecticide	N
35.	Alachlor	Herbicide	N
36.	Aldicarb	Nematicide/Insecticide/Acaricide	N
37.	Endosulfan	Insecticide	N
38.	Lindane	Insecticide	N

39.	Azimphos-methyl	Insecticide	N
40.	Methamidophos	Insecticide	N
41.	Cerboluran	Insecticide	N
42.	Phorate	Insecticide	N
43.	Dicofol	Insecticide	N
44.	Trichlorion	Insecticide	N
45.	Terbufos	Insecticide	N

The Pest Control Products Bill 2022, currently approved by the Cabinet and yet to be introduced to Parliament, will provide a stronger legal foundation to safeguard human health and the environment from the risks associated with pest control. As opposed to the limited capabilities and functions of the current Pest Control Products Board, the bill vests a comprehensive mandate pertaining to pesticide-related issues in a fully-fledged and fully staffed Pest Control Products Authority. The Authority will have the powers to register, analyse and licence pesticides; conduct training and monitor pesticide residues in agricultural produce and in the environment; supervise the disposal of obsolete and expired pest control products; and appoint inspectors and analysts, all to ensure the safeguarding of the environment.

Integrated pest management strategies are also recognised and recommended as a key method of pest control and the proposed law requires that measures be put in place to encourage and recognise local innovation in the development and management of pest control products. This will help in scaling indigenous, local pest control methods. The proposed bill also criminalises the importation of banned or unregistered pesticides. The bill, however, as drafted still has some areas that stakeholders[12] feel should be strengthened. For example, it does not explicitly ban the export from Kenya of pesticides that are banned in Kenya. Such a ban would serve to diminish the chances of Kenya being used as a hub or transit zone to dump pesticides onto other territories. Secondly, the registration duration or period within which a pesticide can be legally used or sold seems to be open-ended and determined on a case-by-case basis and at the discretion of the Pest Control Products Authority. As per the bill, the only requirement appears to be that renewal must be sought at least one month before the lapse of the registration period previously issued by the Authority. A better practice would be for all pesticides to be registered or licenced for a standardised period prescribed in law, after which renewal of the licence or registration is sought. Ghana and Nigeria have such fixed registration timelines. In Ghana all pesticides are registered for a period of three years and in Nigeria five years, after which renewal must be sought. The draft law leaves room for the enactment of regulations, which, however, must not be used to dilute the gains already proposed under the bill.

12 https://www.theelephant.info/analysis/2024/01/17/the-trade-in-pesticides-a-toxic-double-standard/

Case study: Coffee farmer in Central Kenya

The central county of Kirinyaga is one of the top agricultural regions in Kenya. Farmers in this county are known to supply their produce to various places in Kenya including exports. Mr. Bedan Kathiindi Kiura, a 40-year old farmer located in Thumane village, Kirinyaga County is a member of the Kabare coffee cooperative. He farms on a 1.25 acre plot where he has Coffee (400 stems, approximately 0.5 acres) Macadamia trees, Avocado, Bananas, Maize and Beans. He also has a dairy cow and two goats on zero-grazing. Last season he harvested about 1,600Kg of red cherries and 86Kg of dried cherries, both directly delivered to the cooperative-run factory for further processing, which contributed up to 70% of his total farm income. Main pest and disease challenges include the coffee berry disease, leaf rust, and recently the coffee leaf skeletonizer (*Leucoplema dohertyi*).

Fig 1: A young coffee plant under the coffee leaf skeletonizer attack (source: Author)

Mr Kiura grows the Ruiru coffee variety which is resistant to leaf rust, but highly susceptible to the coffee leaf skeletonizer moth, which has only recently become prominent especially in 2025. With visible signs on coffee leaves, it attacks mostly coffee trees under the shade. Meanwhile his neighbours grow a mix of the Ruiru and SLE (SLE 28 and SL 34) varieties – SLE varieities are highly susceptible to the leaf rust.

Fig 2: A neighbour's garden with a combination of leaf rust and the skeletonizer that leads to heavy defoliation as seen (Source: Authors)

Upon observing any pest or disease symptoms on his farmer, Mr. Kiura notifies the group's agronomist based in the location to verify the problem and recommend products for the farmer to use. He places his request with the cooperative to source the right products to address the problem. Periodically, the cooperative will consolidate requests from different farmers (including fertilizers) and source them in bulk. Farmers are informed when materials are available at the cooperative to pick them for application. The cost of the pesticides is then deducted from coffee sales made through the cooperative. The lead time greatly varies between two weeks to a month, and sometimes longer - early determination of material needs is highly recommended.

The cooperative uses this arrangement to ensure that farmers are only sourcing

products that are recommended to avoid any banned pesticides especially in the coffee destination markets, including the EU. However, the cooperative is only controlling materials used by farmers only on coffee, yet farmers grow other crops within or adjacent to coffee that also use pesticides. Typically, Mr. Kiura and other farmers will source products for these crops by themselves from local dealers and distributers. To avert the risk of farmers sourcing banned pesticides, the cooperative raises awareness on banned pesticides – for example Mr. Kiura was aware that Dursban (Chlorpyrifos), Furadan (Carbofuran), Malathion (Malathion) and Sumithion (Fenitrothion) are all banned pesticides, and should not be used by farmers.

The main products he currently uses on coffee are Endsect (which is a combination of Pyriproxyfen 75g/l and Flonicamid 75g/l) produced and imported from China; and Bugati (Azoxystrobin); Quadris (Azoxystrobin) produced by Syngenta Kenya. None of these products are currently listed on the EU banned list, however with limited controls of what other products he uses on non-export crops, the risk of cross-contamination with banned chemicals remains.

Hamza Kilimo Agrovet is one of the main pesticide dealers located in Kutus town, about 5km from Mr. Kiura's farm, where he buys any other pesticides not provided by the cooperative. The dealer is well stocked with a wide variety of farm inputs for both livestock and crop production.

"Some farmers ask for specific products based on their experiences or recommendations, while others ask us to recommend what to use. We therefore act as agronomists".

Common pesticides requested by farmers and thus frequently stocked, include;

1. Fungicides: Bugati (Azoxystrobin); Quadris (Azoxystrobin); Ridomil Gold (Metalaxyl-M 40g/kg + Mancozeb 640g/kg) all produced by Syngenta Kenya. And Green Cop (Copper Oxychloride)

2. Insecticides: Carnon (Acetamiprid) from China; Degree Max (Alpha-Cypermethrin) from India;

3. Herbicides: Glyphosate, 2,4-D, Paraquat; Cleansheet-GS (Glufosinate Ammonium) from China.

Unfortunately, Cyhalothrin, Alpha-Cypermethrin, Mancozeb, Paraquat and Glufosinate Ammonium are all banned pesticides in Europe, but are still visible on the market and actively requested and used by farmers because of lack of awareness of their toxic effects.

The Baragwi Farmers Cooperative Society, to which Mr. Kiura belongs acknowledges

the challenge and the need to do more by farmers, the cooperative itself and other stakeholders. The cooperative has 28,000 farmers and operates 12 factories. Adequate supervision thus remains a challenge to cover all locations. The cooperative is certified by Rainforest Alliance (RA) which restricts the use of only allowed pesticides according to RA's approved list, majority of which are broad spectrum. However, this only covers coffee yet farmers grow other crops on their farms.

"Ultimately we want farmers to reduce the quantity of pesticides they use on their farms by adopting integrated pest management practices. We provide training in these practices", Rose Mukami, the Cooperative Agronomist

According to the cooperative records, the following pesticides are registered and being distributed to farmers; Presento (acetamiprid); Airforce (lambda cyhalothrin); Genomite (pyridaben); Cuprocaffaro (copper oxychloride); Bugati (Azoxystrobin); Quadris (Azoxystrobin); Endsect (Pyriproxyfen and Flonicamid); Vitra blue (copper hydroxide). All of which are allowed for use both in Kenya and in Europe.

4.3 Pesticide regulation in Ghana

The Environmental Protection Agency (EPA) is the regulator of pesticides in Ghana. The authority is responsible for registering and managing pesticides use in Ghana. However, instances of overuse and misuse on crops have been reported with the accompanying negative effects on productivity, environment and human health. Chlorpyrifos, endosulfan and lambda cyhalothrin have been associated with cases of ill health among Ghanaian farmers[13]. Ntow (2001)[14] detected endosulfan and lindane in water and sediment of streams in areas of intensive tomato farming, while other organochlorine pesticide residues were also found in sediment. Similar results were recorded by Ntow (2005)[15] in the Volta Lake region in Ghana.

With these problems, there has been a shift to the use of relatively "safer" pesticide alternatives which gave birth to the implementation of the pesticide registration process of Ghana in 2003. The pesticide law at the time was the Pesticide Control and Management Act, Act 528 of 1996, consolidated as Part II of the main Ghana Environmental Protection Agency (EPA) Act, Act 490 of 1994. This law includes the whole pesticide life cycle, i.e. the registration and procurement of pesticides, their import, distribution and retail to farmers, and their monitoring for quality control and waste management.

On January 6, 2025, Ghana's parliament enacted the Environmental Protection Act,

13 https://link.springer.com/article/10.1007/s10668-018-0154-7
14 https://www.scirp.org/reference/referencespapers?referenceid=1582663
15 https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1440-1770.2005.00278.x

2025 (Act 1124)[16], to replace the Environmental Protection Act, 1994 (Act 490). This enactment elevates the EPA's mandate and serves as the primary legislation for environmental protection, pesticide control and management, and the control and management of hazardous and other wastes.

EPA recognises and protects internationally accepted pesticides for use including those for cocoa which is a major export commodity. Interaction with the authority revealed that the authority complies with international conventions. However, products are banned depending on a country's circumstances like underground water, therefore a product that is highly hazardous in one region may not be a challenge to another country or region. Consequently, the reason for banning a product in Europe may not be applicable to a country outside the region, for example, Ghana.

A total of 32 specific chemicals and formulations are banned in Ghana with reference to the EPA/CCMC-Revised Register of Pesticides December 2024. See the list below.

Table 4. Banned pesticides (provisional) in Ghana

No.	NAME OF PESTICIDE
1.	2.4.5-T and its salts and esters
2.	Aldrin
3.	Binapacryl
4.	Cantafol
5.	Chardane
6.	Chlordimeform
7.	Chlorobenzilate
8.	Dichlorodiphenyltrichloroethane (DDT)
9.	Dieldrin
10.	Dinoseb and its salts and esters
11.	Digitro-ortho-cresol (DNOC) and its salts (such as ammonium salt, potassium salt and sodium salt)
12.	Endrin
13.	HCH (mixed isomers)
14.	Heptachlor
15.	Hexachlorobenzene
16.	Parathion
17.	Pentachlorophenol and its salts and esters
18.	Toxaphene
19.	Mirex
20.	Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)
21.	Methyl-parathion (emulsifiable concentrates (EC) with at or above 19.5% active ingredient and dusts at or above 1.5% active ingredient)

16 https://www.epa.gov.gh/new/laws-regulations/

22.	Monocrotophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/1)
23.	Parathion (all formulations aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) of this substance are included, except capsule suspensions (CS))
24.	Phosphamidon (Soluble liquid formulations of the substance that exceed 1000 g active ingredient/l)
25.	Dustable powder formulations containing a combination of Benomyl at or above 7%, Carbofuran at or above 10% and Thiram at or above 15%
26.	Methyl Bromide
27.	Chlordecone
28.	Alpha hexachlorocyclohexane
29.	Beta hexachlorocyclohexane
30.	Lindane
31.	Pentachlorobenzene
32.	Technical Endosulfan and its related isomers

Source: EPA/CCMC-Revised register of pesticides December2024

EPA's role: Pesticide importers and distributors are registered and approved by EPA, and all approved products should carry the EPA logo. Source of pesticides by importers and distributors is recorded as part of the application process. EPA also trains and registers pesticide applicators and retailers. By law, a farmer is not allowed to spray aside from trained applicators in their region. These are trained personnel with the right skills, personal protective equipment, and knowledge of the right dosage to apply, ensuring that the farmer is not exposed unless he is also in full gear during application. Trained applicators also ensure that empty containers are returned to source, to avoid scattering on the fields. The engagement of applicators is an approach that also helps to control the type of products farmers' purchase. Agricultural Extension Agents (AEAs) are trained and work directly with the Ministry of Food and Agriculture (MoFA) and are well informed of the trained applicators to recommend to farmers. In addition, EPA regularly conducts quarterly monitoring (though monthly is ideal) depending on the resources available.

Findings from pesticide distributors: Survey of two major distributors agrochemical shops in the Western region of Ghana showed that most pesticides available on the market are imported from China, with a few manufactured locally in Ghana – only one product could be traced back to Europe as its source. Active ingredients of common pesticides included Dinotefuran, Emamectin benzoate, Acetamiprid, chlorpyrifos-ethyl, Fenvalerate, NOPEST (1000g DDVP per litre), Chlorfenapyr (insecticides); sulphur, mancozeb, and Copper Oxychloride Matalaxy (fungicides); and Glyphosate and Glyphosate Isopropylamine, Atrazin and Bispyribac-sodium (herbicides).

Distributors were knowledgeable of the registration requirements with EPA of all

products (insecticides, fungicides and herbicides) sold, operational permits required and annual renewal of permits. Products for cocoa production require the Ghana Cocoa Board (COCOBOD) approval before use by cocoa farmers. All agrochemical products bear the registration number EPA and the importer's logo, whereas those approved by Ghana Cocoa Board (COCOBOD) are inscribed with COCOBOD approval on the agro-chemical containers.

Approved pesticides for cocoa application found in the agro-chemical shops included Dependable 20% SL (Acetamiprid and Cypermethrin), Confider (200g Imidacloprid/ litre), Confiba (Imidacloprid 200g/l SL), Aceta star 46 EC (Acetamiprid Bifenthrin), Akate Brafo (Acetamiprid and Bifenthrin), Akate wura (Bifenthrin), Akate King (Acetamiprid and Bifenthrin) all originating from China for the control of (cocoa capsid) mirid.

Case study: Cocoa farmer association in Ghana

This Cocoa Farmer Association is located in the Western region, a predominant cocoa producing region of Ghana. It is a group of 2,450 cocoa farmers with an average size of 2 ha of cocoa per farmer. In the 2024/25 crop cycle, cocoa worth approximately 3 million Euros was produced and exported to the EU.

Although cocoa is the major crop, farmers grow other crops such as plantain, cassava, cocoyam, maize, rice, pepper, tomatoes most of which also require use of pesticides. These additional crops are both for home consumption, and local market to generate additional income. Despite their importance to the farmer, the association only puts attention on cocoa - farmers receive cocoa training and are required to maintain cocoa production and sales records by the association. Group members are bound by an internal control system according to their Rainforest Alliance certification, which issues a list of approved and banned pesticides and fertilizers to farmers periodically based on COCOBOD's recommendations.

Table 5. List of approved pesticides by the cocoa association.

Type	Active ingredient	EU Approved Y/N
Insecticides		
Bufalo super	acetamiprid and chlorfenvinphos*	N
Miricon EC	Pyrethrum (12g/l) + Deltamethrin (6g/l)	Y
Af Confidence	Capsaicin	Y
Nomax 150SC	Alpha-cypermethrin* (75g/l) + Te-flubenzuron* (75g/l)	N
Viper Super 80 EC	Indoxacarb* (60g/l) + Acetamiprid (20g/l)	N
Buffalo Super 4EWTM	Lambda Cyhalothrin	Y, but candidate for substitution
Fungicides		
Agro-Comet 72WP	Metalaxyl (12%) + Copper (I) Oxide (60%)	Y
Fantic Plus 69WP	Cuprous oxide (60%) + Benalaxyl-M (9%)	Y
Fungikill 50WP	Copper (35%) + Metalaxyl (15%)	Y
Funguran OH50WP	Copper Hydroxide (77%)	Y
Kocide 2000 WP	Kocide 2000 WP	Y
Metalm 72WP	Cuprous oxide (60%) + Metalaxyl (12%)	Y
Kentan 40 WG	Copper Hydroxide (400g/kg)	Y
Vamos 500SC	Fluazinam (500g/l)	Y
Sidalco Defender 35WP	Copper Oxychloride (350g/l)	Y
Nordox Super 75 WG	Cuprous Oxide 86%	Y
Ridomil Gold Plus 66 WP	Metalaxyl-M (6%) and Cuprous Oxide (60%)	Y
Champion 80 WP	Copper Hydroxide 77%	Y
Delco75 WP	75 % Cupper (I) Oxide	Y
Herbicides		
Adwumawura, Chemo-state, Kurasate, Afuo Wura, Bonsate, Force Up, Frankosate, Glyfos, Ka-lach, Nnoboa, Oyeadie-yie, Roundup, Sunpho-sate, Sharp	Glyphosate	Y

**not approved in the EU*

The cocoa association also publishes a list of banned agro-chemicals, which currently includes DDT, Untent, Aldrin, Gamalin, Cocostat, Lindane, Dieldrin, Pyrethroid, Endosulfan, Carbofuran, Spirodiclofen, Methylbromide, Fipronil (regent), Thiamethoxan, Glufosinate Ammonium, Lambda Cyhalothrin, Atrazin (Kaltrazine, Maltrazine), Paraquat, Pyrimphos methyl, Imidacloprid.

Notes:

i. Lambda Cyhalothrin appears both on the approved and banned lists., which could imply that the lists are not updated regularly.

ii. Fungicides: Nodox (Cuprous oxide), Qualico (Dimethomorph & Copper Oxychloride), and DELCO (Cuprous Oxide) are supplied by government for free for black pod disease control.

iii. Insecticides: Af Confidence (Capsaicin), Attack (Emamectin Benzoate), Akate King (Acetamiprid & Bifenthrin), Aceta star (Acetamiprid & Bifenthrin), Galil (Imidacloprid & Bifenthrin), Akate star (Acetamiprid & Bifenthrin) are commonly used.

While Bifenthrin is officially approved by the COCOBOD for the control of pests particularly cocoa mirids (capsids) in Ghana, it is outright banned in the EU (Imidacloprid too). According to the U.S.-based National Pesticide Information Centre, bifenthrin can cause tingling, burning, numbness, and can irritate the respiratory tract.

iv. Herbicides: These are not commonly used by farmers – farmers mostly slash the undergrowth using machetes.

A well-maintained cocoa field does not have weed problems
(Source: Authors)

v. Actara (Thiamethoxam) is banned by the Ghana COCOBOD (and the EU) but continues to be used by farmers because of its perceived effectiveness, availability, affordability and recommendation by fellow farmers.

vi. Although the group sometimes directly distributes the recommended pesticides to the group members, as confirmed by the sellers themselves, it is clear that farmers sometimes use products outside the group's recommendation.

vii. Application of pesticides was carried out by farmers themselves or government Mass sprayers when they were available and farmers could afford to pay for their services.

viii. As indicated in Table 5 above, some products are approved by the association (and COCOBOD) but not approved by the EU. This poses an ever-present risk that if the EU ever detects any of these banned active ingredients, such cocoa shipments will be confiscated (and subsequently the exporting entity may be fined and blacklisted) leading to significant income losses to the association[17].

Though the group is aware of EPA approved list, they rely on the COCOBOD approved list through Cocoa Research Institute (CRIG) or the list for standard compliance for export provided by Rainforest Alliance.

17 Three years ago, a farmer was suspended for using the banned paraquat pesticide, after it exceeded the maximum residue levels (MRLs) – the whole consignment was sold outside the group which affected the expected incomes.

5. Conclusions

The debate on the possibility of the EU banning the export of pesticides that are not approved in the EU, and the ban of the import to the EU of food products in which pesticides that are forbidden in the EU have been used is important to small holder farmers in Africa as it is for any other stakeholders. This is primarily because:

- Many small holder farmers depend on export markets as a key source of livelihoods, particularly for crops like coffee and cocoa.
- Smallholder farmers have limited voice and control in value chains due to power imbalances, weak bargaining power, and a lack of resources. However, they are equally concerned about the effects of pesticides on the quality and safety of food they consume, later sell to the market, and the longer-term effects of these materials on their health and the environment.
- Small holder farmers make a significant contribution to agricultural exports from Africa, however most African countries lack the legal and institutional frameworks to support them to adhere to existing and emerging market requirements.

It is therefore important that small holder farmers' situations and requirements are captured, not only as a 'do no harm' consideration but to fulfil the Principle of Policy Coherence for Development enshrined in Article 208(1) of the Treaty of Functioning of the EU. These case studies highlight some of these requirements, especially in terms of what farmers need to be protected and supported to adhere to the proposed pesticide restrictions.

Farmer needs: Farmers source agro-chemicals to use on their entire farms, not only for the export crop as was evident in both case studies. This implies that efforts by the coffee cooperative in Kenya and cocoa association in Ghana to provide approved pesticides, though very progressive, they are not enough to meet the entire farm needs. Farmers are still forced to go to the market to buy pesticides, some of which are unapproved, for other crops grown on the same plots as the export crops.

- **Recommendation:** a whole farm approach should be used when determining farmers agro-chemical needs, than focusing only on the export crops.

Types of pesticides used: Farmers use a mixture of banned and approved pesticides both under local laws and by the EU. This is further complicated when some active ingredients are banned in the EU but they are still allowed under local laws, like the Ghana case study demonstrates.

- **Recommendation:** the EU must cooperate closely with partner countries to ensure alignment of standards, and reasonable phase out periods of any banned pesticides.
- **Recommendation:** special support measures should be designed targeting farmers who do not participate in any sustainability schemes as they are more vulnerable to policy changes related to pesticide usage.

Impacts on cost structure at the farm: Due to the weak enforcement of pesticide restrictions, some banned pesticides are still being produced locally, and imported into the respective countries. Ultimately, the supply has not been interrupted in any way and farmers can still access them at normal prices from the markets. Unless stricter restrictions are enforced locally on the production, and distribution of the banned pesticides, there are no immediate impacts on the cost structure at the farm level.

- **Recommendation:** the perceived efficacy of some banned pesticides, and their low prices still make them desirable by farmers. So governments should introduce instruments like higher taxes while closely observing market trends and prices to determine at which point there is high likelihood of these pesticides being fully removed from the market.
- **Recommendation:** While there is a certain level of policy alignment between the EU's rules on the use of pesticides and producer countries, without stronger enforcement at local level this synergy will not result in tangible progress. The EU should make use of the setting of its EPAs with Kenya and Ghana to establish dialogue and cooperation (including financial and non-financial support) in view of a roadmap for better implementation of pesticides regulations.

Alternatives to banned chemicals: Both Kenya and Ghana have wide availability of pesticides both imported and locally produced. Farmers, dealers nor the cooperative experienced any shortages on the market in the last three years and in case any pesticides are withdrawn, there are alternatives available mostly imported from China.

- **Recommendation:** smallholder farmers and enforcement authorities alike require technical and economic support towards adoption of safer alternatives. There is currently a risk of commercialization alternative channels for the products that no longer meet EU requirements. Such products would have spill over effects on neighbouring crops which are destined to the EU market.
- **Recommendation:** regulatory enforcement to discourage companies producing pesticides with the same active ingredients under different brand names. This is confusing for farmers who may think they are changing products to avoid pesticide resistance, but in practice are using the same products.

Effects on biodiversity, soil health or human health: Unlike Ghana which has a system of trained applicators to support farmers in the application of pesticides, farmers in Kenya source personal protective equipment (PPE) on their own, and no monitoring of how and when they use this equipment is done. However, the cooperative society provides chemical use reduction training including use of resistant varieties e.g. Ruiru II and Batian are resistant to the coffee berry disease and leaf rust, while Ruiru and Batian are susceptible to the leaf skeletonizer and mealybugs; good agronomic practices like pruning; and ensures additional measures are taken to minimize pesticide contamination from used containers by advising farmers to drop used containers at designated collection points, from where a hired service provider collects them for safe disposal.

- **Recommendation:** farmers that don't belong to any sustainability schemes are under greater risk of dropping out from the export markets when EU bans are implemented. Collaborative enforcement by government entities (e.g. PCPB, coffee research institute, County agricultural department in Kenya) and the private sector (e.g. the Baragwi Farmers Cooperative Society and others), also witnessed in Ghana[18], are required to ensure no farmer is left behind.
- **Recommendation:** The different approaches to the application of pesticides in Ghana and Kenya show the diversity among producer countries. The EU should use its delegations in the different countries to map these peculiarities and cooperate accordingly with the respective government entities, producers, and exporters to address the use of banned pesticides.

References

- Foodwatch report: Residues of non-EU-approved pesticides in food, 16/07/2025.
- Foodwatch petition "Stop the toxic trade!"
- EU initiative: "Hazardous chemicals – prohibiting production for export of chemicals banned in the European Union"
- Foodwatch background paper: Stop the Poison Boomerang, 2020.
- EFSA: The 2023 European Union report on pesticide residues in food, 14/05/2025

18 Cocoa farmers source information from Government through the Cocoa Health and Extension Division (CHED), COCOBOD, radio stations, fellow farmers, and other organisations like TROPENBOS, IITA (Solidaridad programme), apart from the association.