

Study

April 2024

EU pesticides export ban: what could be the consequences?

An investigation into the arguments and rationales for the export of selected highly toxic pesticides



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Summary

EU pesticides export ban: economic costs and beneficial effects

This report, commissioned by a coalition of civil society groups, provides an analysis of the likely impacts of an EU halt to the manufacture and export of highly toxic pesticides that are already banned for use in the EU. Our investigation focuses on how a ban would affect EU employment, as well as the impacts on human health and the environment in importing countries. We conclude that stopping the export of EU-banned pesticides would neither endanger employment nor burden the EU economy. At the same time, a ban would positively impact people's health and the environment in importing countries.

While pesticides are banned in Europe because they are too hazardous for humans and/or the environment, European companies are still allowed to manufacture and export them

in other parts of the world. This EU double standard poses a threat to human health and the ecosystems in importing countries, mainly Low- and Middle-Income Countries (LMIC). At the same time, the EU imports food grown using these substances, leading to exposure of EU consumers via residues in imported foods and also putting EU farmers in an unfair competition.

In 2020, in response to the concerns raised by civil society groups in Europe and third countries, the European Commission committed to ending this practice and to setting measures to ensure that "hazardous chemicals banned in the European Union" are no longer "produced for export". As expected, EU-based pesticide manufacturers reacted strongly, arguing that the proposed measures would generate significant job losses and would harm the sector's competitiveness. Furthermore, they claimed that a ban would have no positive effect on importing countries. This report reveals that neither of these claims are true.

Countering job loss claims

According to the available data, the EU is the world's number one exporting region for pesticides. A total of 714,000 tons of agricultural pesticides – with a value of EUR 6.6 billion – were exported in 2022 (excluding intra-European exports and imports). Out of this amount, 81,615 tonnes of 41 banned pesticides were exported for agricultural use in other countries. Our estimates show that exports of EU-banned pesticides from France, Germany, Spain, Belgium, Italy, the Netherlands and Hungary represented only a small proportion of the total volumes and value of exported agricultural pesticides (5 per cent in 2018 and 2 per cent in 2019).

Based on these figures, it was possible to extrapolate the total number of jobs that would potentially be at risk in the seven main European countries as a result of a hypothetical EU export ban. The amounts would have been as low as 133 jobs in 2018, 213 jobs in 2021, and 173 jobs in 2022. These estimates were further fine-tuned by taking a closer look at the consequences of France's 2022 agricultural pesticides export ban for jobs and employment.

In fact, job losses resulting from the French export ban have been negligible. While the French agrochemical industry argued that the ban would lead to massive layoffs – some 2,700 direct jobs and 1,000 indirect jobs in their constituencies – research conducted by investigative journalists showed that output did not decrease in the main affected factories. Although some job positions were made redundant, staff were

simply relocated within the company and no workers were dismissed. Assuming this 'French ratio' of affected jobs would also apply in other EU countries, we calculated that the ban would lead to a total potential loss of 25 jobs in 2022 for the entire EU.

Positive impacts for importing countries

While the negative impact on the EU's economy would be minimal, the positive impact for third countries would be significant. In LMICs, EU-banned pesticides accounted for up to 71 per cent of the total volumes and value of agricultural pesticides imported from the EU in 2018. A ban would mean that the availability of highly hazardous pesticides in importing countries would decrease, which would stimulate the impetus to replace them with safer alternatives.

At the global level, Europe is responsible for at least 9 per cent (in tonnes of active substances) of the use around the world of 12 EU-banned substances. In addition, European countries exported approximately 2,930 tonnes of three EU-banned, highly bee toxic neonicotinoid active ingredients in 2018. This means that approximately 15 per cent of the world's annual consumption is sourced in the European Union.

Taking a substance-by-substance approach, the data published by the European Chemicals Agency (ECHA) from 2018 to 2019 shows that the most exported EU-banned pesticides by volume are also some of the most toxic substances.

Summary

This is particularly problematic in LMICs, where pesticide regulations are often less stringent than in Europe. The result is that people in importing countries have significantly higher levels of exposure to these toxic pesticides.

Other factors amplify the negative impacts generated by the export of EU-banned pesticides for agricultural use in LMICs. Examples include the lack of specific rules and training on the use of pesticides, a higher proportion of the population working in agriculture, the presence of vulnerable children in the labour force, and the unavailability of protective equipment for workers.

EU as global benchmark setter

The combined result of these risk factors makes it clear that an end to the export of EU-banned pesticides would have an important positive impact on many Low- and Middle-Income Countries (and more widely on other destination countries). At the same time, the facts and figures detailed in this report demonstrate that stopping the export of agricultural pesticides banned in the EU would put only a negligible number of jobs at risk, and that these could be maintained by shifting tasks.

Opponents of an EU export ban argue that importing countries will simply turn to other suppliers (i.e. in non-EU exporting countries, potentially through the subsidiaries of the same EU manufacturing companies located outside Europe). While this risk is real, it does not release the EU from its human rights obligations. To address this scenario, the European Union could take action against the imports of agrifood products that are produced using banned pesticides or that have residues of these pesticides. The EU should also campaign for a global phase-out of such pesticides.

For example, paraquat was banned in Europe in 2007, and in 2008 the Maximum Residue Level (MRL) of this substance for food products was decreased to the lowest level of quantification. This herbicide was subsequently banned in 58 countries worldwide. This clearly shows the capacity of the EU to lead by example and to stimulate other countries to follow good practices, with the outcome of a further reduction in the global supply and use of highly hazardous agricultural pesticides.

Stopping the export of EU-banned pesticides would be a practical implementation of the EU's new trade policy to stimulate sustainability, as well as testimony to the potential role of the European Union as a global benchmark setter for chemical regulation.

EU pesticides export ban: what would be the consequences?

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Introduction

The European Union (EU) and its Member States have adopted domestic measures to address the threats caused by toxic pesticides, including banning or prohibiting their use in their territories. But even where such domestic measures have been taken, domestic legislation does not prohibit the export of banned substances that are deemed harmful to third countries outside the EU. This means that Member States continue to allow companies in the EU to manufacture and export banned or unapproved pesticides for use in other parts of the world, posing a threat to humans and the environment in importing countries. As a result, the European Union and its Member States are applying a double standard.

In 2020, the European Commission committed to bringing forward concrete proposals to end this practice. In May 2023, it launched a consultation

on possible measures to ensure that “hazardous chemicals banned in the European Union” are no longer “produced for export”.

In reaction, pesticide manufacturers based in the EU have argued that the measures will generate significant job losses and harm the competitiveness of this EU industry. At the same time, they claim that a ban will have no effect on importing countries.

For this report, we investigated the available data to assess the likely impacts on EU employment of a ban on the manufacture and export of highly toxic pesticides. We also looked at the impacts of this measure on human health and the environment in importing countries, especially Low- and Middle-Income Countries (LMICs) where the risks posed by highly hazardous pesticides is highest.



1 Setting the stage

1.1 The value of the EU pesticide market and the importance of exports

Global sales of pesticides used for agricultural crop protection reached EUR 65.8 billion (USD 69.3 billion) and amounted to 2.8 million tons in 2022.¹ This is more than a doubling since 2000.

The agricultural pesticides market is globalised: the majority of sales are cross-border (import-export transactions) and together they accounted for EUR 46 billion in 2022 or 70 per cent of global sales.²

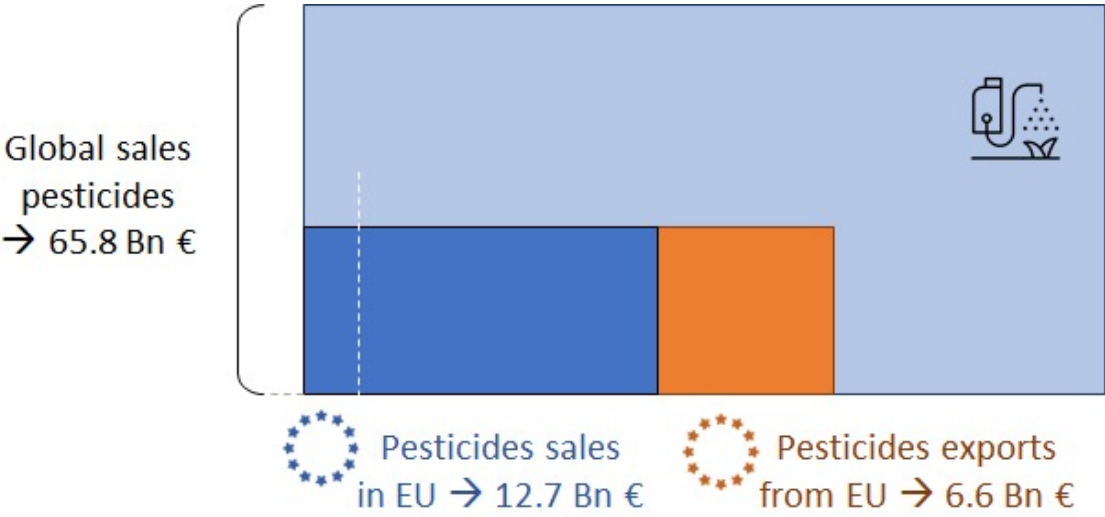


Figure 1. Global and European markets for agricultural pesticides in 2022. Source: BASIC

¹ <https://www.spglobal.com/commodityinsights/en/ci/research-analysis/global-crop-protection-market-provisionally-up-6-in-2022.html> and <https://www.grandviewresearch.com/sector-report/crop-protection-chemicals-industry-data-book>, accessed on 11 December 2023. These sales of pesticides used for agriculture can be put in the context of the global market for agrochemicals (fertilisers and pesticides), which reached EUR 212 billion in 2022. <https://www.precedenceresearch.com/agrochemicals-market>.

² Source: BASIC, based on data from UN Comtrade, <https://comtrade.un.org/data/>

Setting the stage

The European Union is one of the biggest consumer markets, with around EUR 12.7 billion in sales to farmers in 2022.³ Two thirds of these EU27 pesticides sales are generated in five EU Member States: France, Germany, Spain, Italy and Poland.⁴ Moreover, the EU is

the world's number one exporting region, by far outcompeting China and India. In 2022, exports of agricultural pesticides reached more than 714,000 tons (excluding intra-European exports and imports) and had a total value of EUR 6.6 billion.⁵

1.2 EU exports of banned pesticides

There is very little data available on EU exports of banned agricultural pesticides.

The European Chemicals Agency (ECHA) publishes some information. This is based on the declarations of EU exporting companies, which are obliged under the Prior Informed Consent (PIC) Regulation⁶ to notify their designated national authorities about trade in PIC Annex I chemicals in the preceding year.⁷ According to the ECHA, 236 chemicals were listed as banned or severely restricted pesticides in the PIC Regulation at the time this report was published.⁸

However, to protect business secrecy, the data published by ECHA groups together substances, exporting countries and importing countries. This over-aggregation of information makes it

almost impossible to assess the quantities of banned pesticides exported for agricultural use.

The only available data has been published by civil society organisations, who filed multiple freedom of information requests with regulators across the EU and then analysed the detailed export notifications submitted by companies under the PIC Regulation. **An investigation conducted by Public Eye shows that a total of 81,615 tonnes of 41 banned pesticides were exported from the EU for agricultural use in 2018.**⁹ To our knowledge, there is no more recent export data available for these products that covers the EU as a whole. Looking beyond crop protection, **82 banned pesticides – all uses included – were exported outside the EU in 2022** according to Public Eye.¹⁰

³ Source: BASIC, based on data from the EU Farm Accountancy Data Network (FADN), <https://agridata.ec.europa.eu/extensions/FADNPublicDatabase/FADNPublicDatabase.html>

⁴ Source: BASIC, based on data from the EU Farm Accountancy Data Network (FADN), <https://agridata.ec.europa.eu/extensions/FADNPublicDatabase/FADNPublicDatabase.html>

⁵ Source: BASIC, based on data from UN Comtrade, <https://comtrade.un.org/data/>

⁶ Regulation (EU) No 649/2012.

⁷ <https://echa.europa.eu/regulations/prior-informed-consent/annual-reporting-on-pic-exports-and-imports>

⁸ <https://echa.europa.eu/fr/information-on-chemicals/pic/chemicals>

⁹ <https://www.publiceye.ch/en/topics/pesticides/banned-in-europe>, accessed on 17 December 2023.

¹⁰ Unearthed and Public Eye. "EU Still Sending Banned Bee-Killing Pesticides to Poorer Countries," 16 May 2023; Unearthed and Public Eye. "France Still Exporting Prohibited Pesticides, despite Landmark Ban," 30 November 2022; Unearthed and Public Eye. "The Paraquat Papers: How Syngenta's Bad Science Helped Keep World's Deadliest Weedkiller on the Market," 24 March 2021; Agrotóxico Mata et al. "Study: Hazardous Pesticides from Bayer and BASF – a Global Trade with Double Standards," 21 April 2020; Pesticide Action Network Europe. "Banned Pesticides Still in Use in the EU," 11 January 2023.



2 Limited impact on jobs and employment in EU exporting countries

2.1 Banned pesticides: a tiny share of the EU pesticide economy

In order to assess the economic importance of EU-banned pesticide exports, we have relied on the data obtained by Uearthed and Public Eye through freedom of information requests. This is the most extensive data available to date. In total, the investigation netted hundreds of documents that shed light on banned pesticides exported from the EU: EU exporting countries, importing countries, related volume and the main companies involved.¹¹

The results provide estimates of the annual volume of each product included in the group of EU-banned pesticides (mentioned in the Public Eye report). These products were:

- exported in 2018 and 2019 by all major EU exporters (and in 2021 and 2022 by Germany, France and Belgium);
- declared on the export notifications and cross-checked with companies; and

- expressed in kg or litres of active substances or mixture/formulated products.

Next, we wanted to estimate what proportion of the total exports of agricultural pesticides from the European Union involves pesticides that have been banned. We used the UN Comtrade database¹² to retrieve the volumes and value of exported herbicides, insecticides and fungicides for the same years (2018, 2019, 2021 and 2022) and for the same key exporting countries: France, Italy, Netherlands, Belgium, Germany, Spain and Hungary. According to the data gathered by Uearthed and Public Eye, these seven countries together made up more than 92 per cent of the total volume of EU-banned pesticides exported from the EU in 2018 and 2019.

The data extracted from the Comtrade database has the same limitation as the data published by Uearthed and Public Eye; quantities are

¹¹ The full set of data is freely available at the following link: https://docs.google.com/spreadsheets/d/e/2PACX-1vSbJPEpMfyhuLYNmgaW7RZVCdG6LQgtDNVIZOKJEsV39Kr9Ju_3TQTpEtUSml1PQ3j19Kl77B9KWdwT/pubhtml and the main results can be found at: <https://unearthed.greenpeace.org/2020/09/10/banned-pesticides-eu-export-poor-countries/>

¹² <https://comtrade.un.org/data/>

Limited impact on jobs and employment in EU exporting countries

either expressed in kg or litres of pesticide active substances or mixture/formulated products, depending on the physical form in which the products have been exported. This is because custom authorities' procedures do not require systematic information on the exact active substance content of pesticide products, but only record the quantities of the whole product or the active substance being exported.

Ultimately, **these two datasets from Public Eye/Unearthed and Comtrade**, which are the best currently available, have similar limitations in the sense that they include volume figures that mix product volumes and active substance volumes, depending on whether the export was a product or a substance. **Their limitations notwithstanding, these datasets allow us to make comparisons and to provide orders of magnitude.**

In addition, we have retrieved information from the Eurostat Prodcom database¹³ in order to estimate the domestic production of pesticides. This includes for example the volumes and value of products that are not exported and remain in the producing country during the same years (2018, 2019, 2021 and 2022) and covers the same key countries (France, Italy, Netherlands, Belgium, Germany, Spain and Hungary). As previously mentioned, the volume figures in Eurostat Prodcom database are expressed in kg or litres of active substances or mixture/formulated products depending on the form in which they are sold, and are hence consistently comparable with the Comtrade export figures and EU-banned pesticides export data obtained by Uearthed and Public Eye.

Based on this, **we have compared the total value of exports and domestic sales of agricultural pesticides to the value of EU-banned pesticides exported for agricultural use.**

To estimate the value of the banned pesticides for agricultural use exported by the EU, we have **multiplied the related volumes by the unit value of these substances.**

Given the data limitations as previously explained, the only available information is the unit value of all agricultural pesticides exported each year from each Member State as declared in the UN Comtrade database. We have thus made the assumption that the banned agricultural pesticides are sold at the same average unit value as other agricultural pesticides exported each year from each Member State. This is a safe assumption, as most EU-banned pesticides are old substances that are no longer patented,¹⁴ which means they are likely sold at a lower average price on the market.

The unit value of all agricultural pesticides exported each year from each Member State is calculated by dividing the total export value of these products by the total related volumes recorded in the UN Comtrade database. This unit value is expressed in USD/Kg for each country and each year and can be converted into EUR/Kg based on the average exchange rate of the same reference year. The resulting unit value lies between 7 USD/kg and 15 USD/kg between 2018 and 2022 depending on the export country and the year.

¹³ <https://ec.europa.eu/eurostat/web/prodcom/database>

¹⁴ Banned pesticides exported by the EU are mostly very old chemicals: the soil fumigant 1,3-Dichloropropene was introduced in 1956, atrazine was first registered in 1958, paraquat has been on the market since 1962, imidacloprid was introduced in 1985, and chlorpyrifos was first registered for agricultural use in 1965.

Limited impact on jobs and employment in EU exporting countries

The main results of these comparisons for the principal EU countries that have exported the largest volumes of EU-banned pesticides for the years 2018 and 2019 are detailed below.

Country	Year 2018						
	Exported volumes of EU-banned agricultural pesticides (kg)	Total exported volumes of agricultural pesticides (kg)	Value of exported EU-banned agricultural pesticides (kg)	Total value of exported agricultural pesticides (kg)	% of EU-banned agricultural pesticides within total volumes of pesticide exports	% of EU-banned agricultural pesticides within total value of pesticide exports	% of EU-banned agricultural pesticides within total turnover of pesticides (domestic + exports)
France	7 663 389	261 232 473	101 396 805	3 456 452 235	3%	3%	2%
Germany	8 078 963	218 104 137	130 802 663	3 531 220 773	4%	4%	2%
Spain	5 182 400	114 211 484	52 976 961	1 167 524 186	5%	5%	2%
Belgium	4 987 471	65 105 951	47 490 805	619 940 248	8%	8%	4%
Italy	9 499 920	71 730 814	93 587 221	706 646 745	13%	13%	8%
Netherlands	8 010 213	65 412 331	56 569 211	461 950 755	12%	12%	8%
Hungary	153 000	41 892 825	2 138 387	585 510 376	0.4%	0.4%	0.3%
TOTAL	43 575 356	837 690 015	484 962 053	10 529 245 319	5%	5%	3%

Table 1. Comparison between exports of EU-banned pesticides for agricultural use (volumes and value), total exports of agricultural pesticides (volumes and value) and total turnover of agricultural pesticides in key EU Member States in 2018.

Source: BASIC, based on official export notification data collected and evaluated by Unearthed/Public Eye, UN Comtrade and Eurostat Prodcom.

Limited impact on jobs and employment in EU exporting countries

Country	Year 2019						
	Exported volumes of EU-banned agricultural pesticides (kg)	Total exported volumes of agricultural pesticides (kg)	Value of exported EU-banned agricultural pesticides (kg)	Total value of exported agricultural pesticides (kg)	% of EU-banned agricultural pesticides within total volumes of pesticide exports	% of EU-banned agricultural pesticides within total value of pesticide exports	% of EU-banned agri-cultural pesticides within total turnover of pesticides (domestic + exports)
France	7 804 535	369 849 690	81 664 361	3 822 052 251	2%	2%	1%
Germany	943 776	225 633 691	13 668 163	3 267 722 444	0.4%	0.4%	0.2%
Spain	2 233 667	98 734 208	26 157 259	1 156 222 833	2%	2%	1%
Belgium	5 745 786	66 219 213	47 518 662	559 710 532	8%	8%	4%
Italy	2 482 820	64 421 217	25 938 670	673 025 292	4%	4%	2%
Netherlands	3 571 111	69 021 838	20 468 056	395 603 168	5%	5%	3%
Hungary	94 000	37 997 833	1 413 257	571 283 924	0.2%	0.2%	0.2%
TOTAL	22 875 694	931 877 690	216 828 426	10 445 620 446	2%	2%	1%

Table 2. Comparison between exports of EU-banned pesticides for agricultural use (volumes and value), total exports of agricultural pesticides (volumes and value) and total turnover of agricultural pesticides in key EU Member States in 2019.

Source: BASIC, based on official export notification data collected and evaluated by Unearthed/Public Eye, UN Comtrade and Eurostat Prodcom.

Limited impact on jobs and employment in EU exporting countries

According to our estimates and as shown in the above tables, exports of EU-banned pesticides accounted for:

- only 5 per cent in 2018 and 2 per cent in 2019 of the total volumes and value of agricultural pesticides exported from the seven key EU exporting countries; and
- only 3 per cent in 2018 and 1 per cent in 2019 of the total turnover (amount) of agricultural pesticides sold by manufacturers (domestic sales and exports) in the same seven key EU exporting countries.

When these results are analysed country by country, it emerges that the share of EU-banned pesticides is lower than this average for the three main exporters of pesticides (both banned and not banned) – France, Germany and Spain – and higher for the smaller exporting countries, i.e. Belgium, Italy and the Netherlands. (In absolute terms, however, the volumes and value linked to exports of EU-banned pesticides are much lower in the latter).

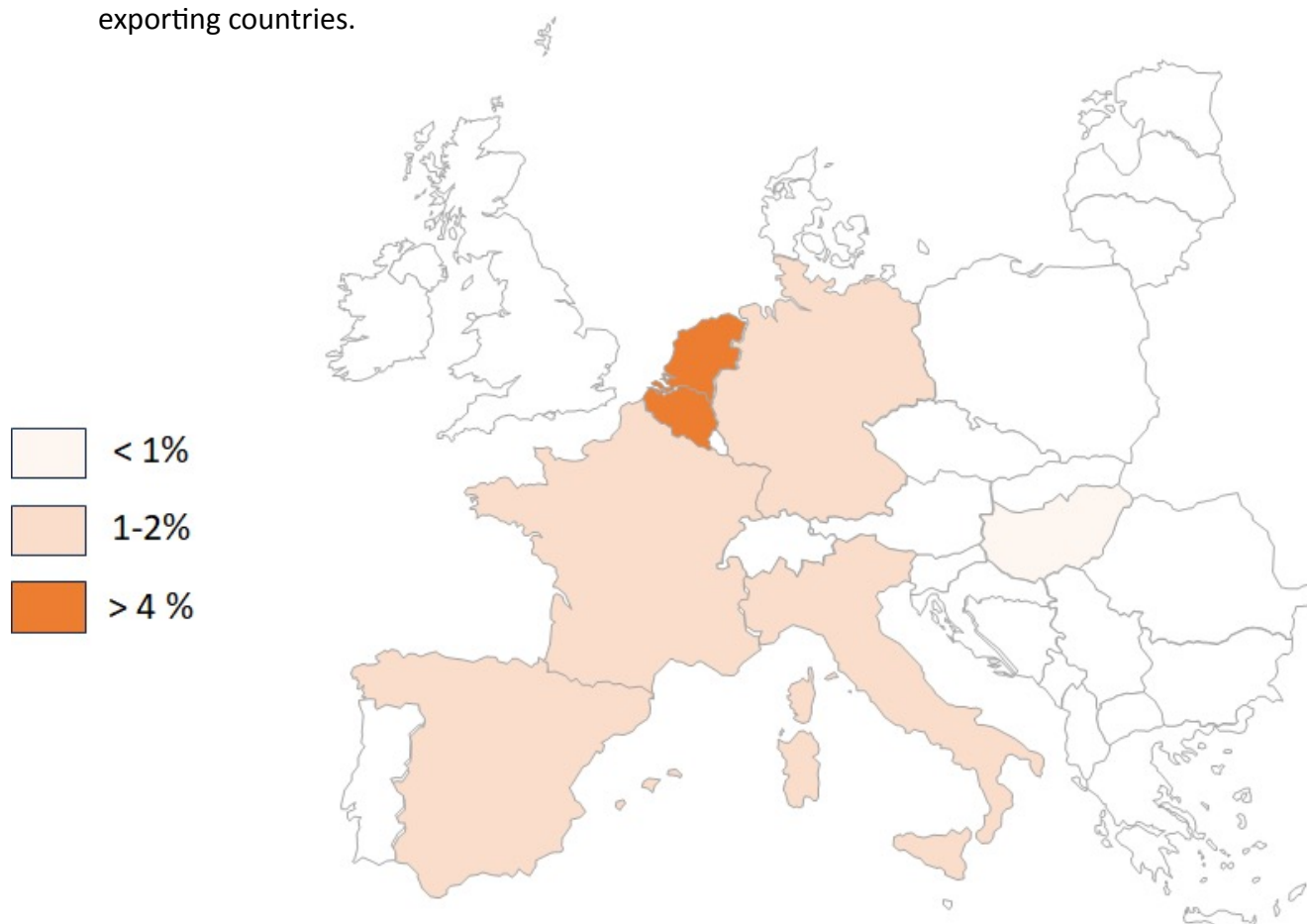


Figure 2. Share of the export value of EU-banned pesticides for agricultural use in the total turnover (amount) of agricultural pesticides sales by country (total domestic sales and exports) in 2019.

Source: BASIC.

More recently, Public Eye and Uearthed have obtained the export notifications received by German, French and Belgian authorities from companies in 2021 and 2022.

The results are provided in the following tables.

Limited impact on jobs and employment in EU exporting countries

Country	Year 2021						
	Exported volumes of EU-banned agricultural pesticides (kg)	Total exported volumes of agricultural pesticides (kg)	Value of exported EU-banned agricultural pesticides (kg)	Total value of exported agricultural pesticides (kg)	% of EU-banned agricultural pesticides within total volumes of pesticide exports	% of EU-banned agricultural pesticides within total value of pesticide exports	% of EU-banned agricultural pesticides within total turnover of pesticides (domestic + exports)
France	28 371 775	283 531 008	433 051 030	4 327 659 976	10%	10%	6%
Germany	9 267 572	205 375 859	131 852 231	2 921 937 533	4.5%	4.5%	2.4%

Country	Year 2022						
	Exported volumes of EU-banned agricultural pesticides (kg)	Total exported volumes of agricultural pesticides (kg)	Value of exported EU-banned agricultural pesticides (kg)	Total value of exported agricultural pesticides (kg)	% of EU-banned agricultural pesticides within total volumes of pesticide exports	% of EU-banned agricultural pesticides within total value of pesticide exports	% of EU-banned agricultural pesticides within total turnover of pesticides (domestic + exports)
Germany	18 359 893	222 927 087	247 416 074	3 004 143 020	8.2%	8.2%	4.4%
Belgium	15 447 401	97 345 167	116 752 272	735 739 908	16%	16%	9%

Table 3. Comparison between exports of EU-banned pesticides for agricultural use (volumes and value), total exports of agricultural pesticides (volumes and value) and total turnover of agricultural pesticides in France, Germany and Belgium in 2021 and 2022.

Source: BASIC, based on official export notification data collected and evaluated by Unearthed/Public Eye, UN Comtrade and Eurostat Prodcom.

Limited impact on jobs and employment in EU exporting countries

The above figures show that the share of EU-banned pesticides for agricultural use within the total exports and turnover of these products remained low in France, Germany and Belgium in 2021 and 2022, but were significantly higher than in 2018 and 2019.

- For France, the share rose from 7,663 tonnes in 2018 to 28,371 tonnes in 2021.
- For Germany, the share rose from 8,079 tonnes in 2018 to 9,268 tonnes in 2021 and 18,360 tonnes in 2022.
- For Belgium, the share rose from 5,132 tonnes in 2018 to 5,746 tonnes in 2019 and 15,447 tonnes in 2022.

The most likely explanation for these increases in 2021 and 2022 was the addition of newly banned substances to the list of chemicals that must be exported under the EU's Prior Informed Consent (PIC) rules. For instance, in 2020 alone, 22 hazardous chemicals were added to the EU PIC Regulation for imports and exports (these products were probably exported the years before but did not count as banned chemical exports prior to that date).¹⁵

Even at this level, the value of German exports of EU-banned pesticides made up only 4.4 per cent of the total turnover of agricultural pesticides sold by manufacturers in the country in 2022 (total domestic sales and exports). In the case of Belgium, EU-banned pesticides comprised 9 per cent of the total turnover of pesticides sold in the country in 2022.

2.2 The ban will not kill jobs

2.2.1 Estimate of the number of jobs at risk in main EU countries

Based on the results detailed in the previous section, we have estimated the number of jobs that would be put at risk with an EU ban of the pesticides mentioned in section 1.2.

The starting point was to calculate the total number of jobs linked to the agricultural pesticides industry (also known as the 'crop protection' industry). The most thorough publicly available estimate on the subject has been developed by

Oxford Economics, based on Eurostat data and published in 2019. According to this research, the **agricultural pesticides sector accounted for 15,700 jobs in the European Union in 2018, among which 12,400 jobs were based in the seven key EU exporting countries of EU-banned pesticides.**¹⁶ These jobs make up only a very small proportion of total employment in the chemical sector: around 1.9 per cent in Germany and 1.2 per cent in Belgium.¹⁷

¹⁵ <https://echa.europa.eu/fr/-/22-hazardous-chemicals-added-to-eu-regulation-on-imports-and-exports>, accessed on 21 February 2024.

¹⁶ Bedford, J. and Logan, A. "The Economic Impact of the Crop Protection Industry," 2019.

In addition, the industry claims that the jobs created by the suppliers of EU pesticide manufacturers should be considered, which adds up to a total of 60,400 direct and indirect jobs in Europe. However, the indirect jobs should only be taken into account in the estimates if it can be proven that the people associated with these jobs would not be employable in another sector in the absence of pesticide manufacturers. As this has not been demonstrated in any study, we have not taken this indirect employment into account.

¹⁷ <https://www.essenscia.be/wp-content/uploads/2023/05/chiffres2022-belgium-fr.pdf>, accessed on 11 December 2023.

Limited impact on jobs and employment in EU exporting countries

Not all of these jobs in the agricultural pesticides sector are linked to manufacturing; a significant proportion of them relate to research and development, marketing, sales, etc. Based on 2010 figures (the most recent available) published by agrochemical industry association CropLife, the breakdown of total jobs in the EU's agricultural pesticides sector is as follows:

- 42 per cent are employed in production and logistics;
- 25 per cent work in sales and marketing;
- 21 per cent are employed in R&D and technical support; and
- the remaining 12 per cent work in other areas of the company (HR, accounting, etc.).

Given that agricultural pesticides banned in the EU have long since been developed (thus research and development is no longer needed) and are sold only outside Europe (requiring little if any marketing in the EU), it is a credible assumption that **the jobs linked to production and logistics are the main ones that could be at risk in the case of an export ban.**¹⁸

Based on these figures, we have concluded that the number of jobs that could be at risk following an EU-wide export ban on the agricultural pesticides mentioned in section 1.2 is proportionate to the drop in turnover generated by manufacturers. This enabled us to estimate the number of jobs at risk in 2018 for each EU country, based on the following formula:

$$\begin{array}{l} \text{No. of jobs} \\ \text{potentially} \\ \text{at risk} \end{array} = \begin{array}{l} \text{No. of production and} \\ \text{logistics jobs in the EU} \\ \text{agricultural pesticides} \\ \text{sector} \end{array} \times \begin{array}{l} \text{Share of EU-banned pesticides used for} \\ \text{crop protection within total turnover of} \\ \text{agricultural pesticides sold by manufacturers} \\ \text{(= loss of turnover if export ban)} \end{array}$$

Next, we updated these estimates for France, Germany and Belgium for the years 2021 and 2022 (no updated EU-banned agricultural pesticides export data is available for the other countries). We took the following into account:

- the evolution of EU-banned agricultural pesticides exports from France, Germany and Belgium (presented in section 2.1); and
- the export ban in force in France since 2022.

For all of the studied countries, we assumed that the total number of jobs in the agricultural pesticides sector was stable between 2018 and 2022 (in this case also due to the absence of updated estimates based on the same methodology for 2021 and 2022).

The final results of our calculations are presented in the table below.

¹⁸ Anonymised interviews with experts from the sector indicated that a primary characteristic of EU-banned pesticides is that they are old, unpatented products that require no more marketing, research and development, or other expenses in Europe (this assumes that marketing and promotion are undertaken in the countries of final sales).

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	Total number of jobs in the agricultural pesticides sector	Number of jobs in the production and logistics of agricultural pesticides (kg)	Number of jobs that could be put at risk as a result of an EU export ban of agricultural pesticides (kg)		
	2018	2018	2018	2021	2022
France	3,100	1,312	23	84*	-
Germany	5,200	2,200	46	52*	96*
Spain	2,000	846	19	19	19
Belgium	600	254	11	24	24*
Italy	800	338	26	26	26
Netherlands	200	85	7	7	7
Hungary	500	212	1	1	1
TOTAL	12,400	5,246	133	213	173

* Calculations updated based on the export notifications of French, German and Belgian companies that planned to export banned pesticides that fall under EU Regulation No 649/2012 in 2021 and 2022.

Table 4. Estimate of the number of jobs at risk resulting from an EU ban on the export of EU-banned pesticides. **Source:** BASIC, based on data from Oxford Economics, Unearthed/Public Eye, Comtrade and Prodcorn.¹⁹

As shown in the table above, **our estimates of the total number of jobs potentially at risk due to the implementation of an EU export ban in**

the seven main European countries concerned was as low as 133 jobs in 2018, 213 jobs in 2021, and 173 jobs in 2022.

2.2.2 Consequences of the export ban law in France

To fine-tune these estimates, we analysed the consequences of the export ban that entered into force in France in 2022 on the jobs and employment in the country’s agricultural pesticides sector.

In 2018, the French government adopted a law that aimed to prohibit the export of banned pesticides from the country.²⁰ The law entered into force in January 2022.

¹⁹ The national figures for the number of jobs in the agricultural pesticides industry only relate to herbicides, insecticides and fungicides. They are therefore smaller than the figures occasionally published by the industry itself, which relate to the wider sector including biocides, disinfectants, etc. See for example Belplant’s 2022 position paper, which claimed a total of 1,403 jobs in the sector in Belgium.

²⁰ It is worth underlining that the French legislative scheme contains major loopholes. The ban applies to plant protection products «containing» substances that are not authorised in Europe, but not to the active substances themselves. In addition, the decree implementing the law introduces a derogation: pesticides may continue to be exported a) when authorisation has expired but the product has not been formally banned at European level, and b) when manufacturers have not submitted applications for renewal. This last point is currently being revised in a decree to be published soon.

Limited impact on jobs and employment in EU exporting countries

Initially, the French agrochemical industry argued that this export ban would lead to massive layoffs. In 2018 and 2019, the plant protection products lobby Phytéis (formerly UIPP) lobbied several members of the French parliament with the argument that the pesticide ban jeopardised 2,700 direct jobs and 1,000 indirect jobs in their constituencies.²²

Research by investigative journalists showed that the 2,700 direct jobs figure was unfounded and inflated. By speaking with union members inside the factories, journalists found that the impacts in the main affected factories did not include reduced output or the firing of workers.²³ **Most factories said they were not impacted, and some even reported recent hires of new employees.**²⁴ One factory that formerly produced large quantities of the EU-banned substance atrazine did not fire any workers, but instead started producing 16 new pesticides. **Only one of the researched factories – owned by Bayer in Marle (Aisne) – experienced a change, reporting a drop of 12 temporary contracts but no firings of permanent staff,** as production was simply redirected to other, non-banned pesticides.²⁵

The publication of this information led to an alert by NGOs (Veblen Institute, Transparency International, Foodwatch and Les Amis de la Terre) and an official referral to the Senate Research Ethics Committee, the National Assembly Ethics Officer and the High Authority for Transparency in Public Life (HATVP).²⁶

The inflated unemployment numbers ultimately led to the imposition of sanctions on Phytéis. On the grounds that it failed to comply with Senate conventions on deontology (specifically the responsibility to exercise “probity and integrity”),²⁷ the lobby association was subject to a cease-and-desist motion by the French Senate in early May 2023, a historic first.²⁸ On June 30th, the President of the French National Assembly also issued a formal notice to Phytéis for failure to comply with the obligation not to provide information that contains deliberately inaccurate information intended to mislead the deputies. The National Assembly agreed with the Senate that Phytéis provided inaccurate information and showed itself incapable of providing the figures. It further indicated that Phytéis showed “negligence that can only be

²¹ Union of Plant Protection Industries.

²² Le Poulpe. “Senate puts lobbyist for 19 pesticide companies on notice for false job blackmail,” 3 May 2023. According to UIPP, the partial ban would lead to the closing of virtually all of Phytéis’ 19 factories in France and the firing of 93 per cent of its employees.

²³ Le Poulpe. “Comment le lobby des pesticides, soutenu par le sénateur socialiste Didier Marie, a menti,” 3 January 2023.

²⁴ One unit of this factory manufactured the product Ridomil Gold MZ 68. This contains mancozeb, a substance for which the European authorisation expired in January 2021. The unit represented 15 permanent workers. None were fired; they were simply redirected to other activities. Le Poulpe. “Comment le lobby des pesticides, soutenu par le sénateur socialiste Didier Marie, a menti,” 3 January 2023.

²⁵ “We lost 12 employees and products because of the Egalim law, but we were able to bounce back and fight to bring this activity here, which enables us to compensate for the volumes lost,” according to the manager of Bayer’s Marle site in an article published in L’Aisne nouvelle on 5 October 2022.

²⁶ The Parliament received a formal notice for lobbying actions targeting members of parliament. France’s High Authority for Transparency in Public Life (HATVP) received a formal notice as well for lobbying actions targeting the executive, government and central administrations.

²⁷ French Senate. Article 3: “Code de conduite applicable aux représentants d’intérêts au Sénat.” <https://www.senat.fr/connaitre-le-senat/role-et-fonctionnement/les-obligations-deontologiques-des-senateurs.html>

²⁸ Veblen Institute. “Phytéis pesticides lobby given formal notice by the Senate following the report of 4 NGOs,” 3 May 2023.

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considered to be wilful.²⁹ But unlike the Parliament, the HATVP did not issue a formal notice to Phytéis for the breach of its ethical obligations. The president of the HATVP explained that the High Authority only had to judge Phytéis' letters to the government, which were drafted "more prudently" than their correspondence to members of parliament on which the National Assembly and Senate decisions were based.³⁰

These results show that **the loss of jobs docu-**

mented in France resulting from the enforcement of the export ban **totalled only 12 temporary contracts, and that there was no loss of permanent staff.** In comparison, **our estimate of jobs that were potentially affected before the export ban amounted to 84 jobs in 2021, about seven times higher than the actual number of jobs lost. In other words, the number of jobs lost in France as a result of the export ban were approximately seven times lower than our estimate of the number of jobs at risk.**

2.2.3 Most likely consequences for employment at EU level

Based on the experience from France, it can be expected that pesticide manufacturers in other EU countries would also **be able to reallocate the jobs affected by an export ban to other tasks,** specifically to the production and export of other non-banned pesticides. **Based on our previously presented estimates,** if we assume that the same 'French ratio' will also apply in other EU countries – i.e. around seven times fewer jobs actually lost in comparison with the number of jobs at risk – this would lead to a **potential loss of only 25 jobs in 2022 for the entire EU.**

In addition, it should be noted that **pesticide manufacturers have very large profit margins and more than enough profitability to financially absorb any limited reductions in their EU turnover that might result from an EU-wide export ban.**

Indeed, even the current soaring energy costs have not hampered the profitability of leading pesticides manufacturers; on the contrary, their **financial results have reached historical heights**

since 2018, in particular in 2022 (see Table 5). This conclusion is supported by the following information:

- 1) The four leading pesticide companies appear to have quickly recovered from the COVID shock, with a return to sizable annual increases in key profitability metrics.
- 2) **The combined EBITDA** (earnings before interests, tax, debt and amortisation) generated by the agricultural activities of the world's four biggest pesticide manufacturers reached **over EU 11,300 million in 2022, a doubling compared to 2018.** (Note: R&D spendings and investments are taken into account when calculating EBITDA).
- 3) Among the four leaders in the pesticide industry, the two European companies **Bayer and BASF** achieved by far the highest level of EBITDA, reaching respectively EUR 6,867 million and EUR 1,221 million in 2022 - a growth of 159 per cent for Bayer since 2018, and 66 per cent for BASF.

²⁹ Assemblée Nationale. "Mises en demeure - Représentants d'intérêts," www.assemblee-nationale.fr and Transparency International France ANALYSE #Lobbying. "Cinq leçons à tirer de la deuxième mise en demeure du lobby des pesticides par l'Assemblée nationale," www.transparency-france.org.

³⁰ <https://www.terre-net.fr/produits-phytos/article/845232/phyteis-echappe-a-une-mise-en-demeure-de-la-hatvp>

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Company	Indicator	2018	2019	2020	2021	2022	Change 2018-22
Bayer Crop Science³¹	EBITDA before special items	€ 2,651 M	€ 4,796 M	€ 4,536 M	€ 4,698 M	€ 6,867 M	+ 159%
BASF Agricultural Solutions	EBITDA before special items	€ 734 M	€ 1,095 M	€ 970 M	€ 715 Mn	€ 1,221 M	+ 66%
Corteva Crop Protection	EBITDA	\$ 1,100 M	\$ 1,100 M	\$ 1,000 M	\$ 1,200 M	\$ 1,700 M	+ 54%
Syngenta	Net income attributable to shareholders	\$ 1,447 M	\$ 1,450 M	\$ 1,421 M	\$ 1,443 M	\$ 1,909 M	+ 32%
TOTAL		€ 5,700 M	€ 8,209 M	€ 7,707 M	€ 7,816 M	€ 11,379 M	+ 100%

Table 5. Profitability of leading pesticide manufacturers, 2018-2022.

Source: BASIC, based on annual and quarterly financial reports for the relevant companies.

In the case of an EU-wide end to the export of banned pesticides, we can assume that each job at risk costs approximately EUR 50,000 per year, including wages and social contributions.³² **The cumulative spending related to the 34 jobs at risk in the agricultural pesticides sector would total only EUR 1.7 million in 2022.**

This figure can be compared to the increase of EUR 3,563,000 in EBITDA between 2021 and 2022 for the four leading pesticides manufacturers operating in the EU.

In other words, **the cumulative costs of the jobs at risk represent less than 0.5 per one thousandth (0.05 percent) of the increase in EBITDA for the four biggest pesticide manufacturers in Europe.** This demonstrates that these companies have more than enough internal financial resources to maintain these jobs and to reassign workers to new activities that do not involve the production of hazardous chemicals.³³

³¹ At Bayer, the year 2019 saw spectacular growth (+80 per cent) in relation to 2018. This was due “to the earnings contribution from the acquired agriculture business and to the realization of cost synergies as we progress with its integration”. Bayer. “Annual Report 2019,” 2020.

³² Based on the average wage in the EU chemical sector recorded in the Eurostat database.

³³ McKinsey & Company. “Companies can build on Europe’s intrinsic strengths and play offense in sustainability, while pursuing consolidation and functional excellence,” <https://www.mckinsey.com/industries/chemicals/our-insights/securing-the-competitiveness-of-the-european-chemical-industry#/>, accessed on 28 March 2024.



3

The wide-ranging positive effects

for importing countries linked to an EU export ban

3.1 The significant share of EU-banned agricultural pesticides in imports by Low- and Middle-Income Countries

To complement the analysis presented in the previous section on EU export countries, we have analysed the potential impact of the pesticide export ban on markets outside the EU, especially on Low and Middle Income Countries (LMICs) where the risks posed by highly hazardous pesticides are the highest due to weaker regulations and the lack of strict enforcement.³⁴ To do this, we adopted a similar approach of comparing the volumes of EU-banned pesticides imported from the seven main EU export countries (France, Italy, Netherlands,

Belgium, Germany, Spain and Hungary) with the total volume of agricultural pesticides imported from these same countries for the year 2018.

We relied on the same sources of data as previously used, i.e.:

- information from the export notifications collected and consolidated by Unearthed and Public Eye in 2020;
- the UN Comtrade Database to process import statistics for herbicides, insecticides and fungicides.

³⁴ <https://www.europarl.europa.eu/cmsdata/219887/Pesticides%20health%20and%20food.pdf>, accessed on 21 February 2024.

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As this section focuses on LMICs, we have excluded importing countries from the EU as well as North America, Japan, Australia and New Zealand. Based on this assumption, the export notification figures published by Unerthed and Public Eye show that the following countries are the main LMICs importing EU-banned pesticides (listed by descending order of volume imported):

1. Brazil
2. Ukraine
3. Morocco
4. Mexico
5. Chile
6. South Africa

7. Peru
8. Vietnam
9. India
10. China
11. Malaysia
12. Argentina

13. Honduras
14. Colombia
15. Indonesia
16. Egypt
17. Sudan
18. Ecuador

Together, these countries account for 90 per cent of the total quantities exported. The table n. 6 on page 18 details the results we obtained for each country in 2018, i.e.:

- the volume of EU-banned agricultural pesticides (in kg or L) imported from the seven key EU exporters (France, Italy, Netherlands, Belgium, Germany, Spain and Hungary);
- the total volume of agricultural pesticides (in kg or L) imported from the seven key EU exporters (France, Italy, Netherlands, Belgium, Germany, Spain and Hungary); and
- the share of EU-banned pesticides in the total volume and value of agricultural pesticides imported from these key EU exporters (in per cent).



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Country	Year 2018			
	Imported volumes of EU-banned agricultural pesticides (kg)	Total volume of agricultural pesticides imported from seven key EU exporters (kg)	% of EU-banned agricultural pesticides within total volume of pesticides imported from key EU exporters	% of EU-banned agricultural pesticides within total value of pesticides imported from key EU exporters
Brazil	10 080 462	28 297 609	36%	36%
Ukraine	6 005 160	45 526 456	13%	13%
Morocco	3 730 440	12 965 729	29%	29%
Mexico	3 373 400	6 524 116	52%	52%
Chile	1 933 442	9 557 597	20%	20%
South Africa	1 695 030	28 177 323	6%	6%
Peru	1 519 200	2 997 512	51%	51%
Vietnam	1 420 770	9 526 170	15%	15%
India	1 346 000	9 289 151	14%	14%
China	1 308 820	11 796 620	11%	11%
Malaysia	1 217 753	1 712 506	71%	71%
Argentina	719 470	5 076 459	14%	14%
Honduras	689 970	1 037 518	67%	67%
Colombia	677 521	3 048 034	22%	22%
Indonesia	652 064	5 778 063	11%	11%
Egypt	517 075	5 419 630	10%	10%
Sudan	430 480	708 265	61%	61%
Ecuador	412 960	2 299 156	18%	18%

As demonstrated by the figures in the table above, the EU-banned pesticides exported from European countries are much more important for the LMICs importing them than they are for the EU exporting countries (France, Italy, Netherlands, Belgium, Germany, Spain and Hungary).

- For the LMICs, the EU-banned pesticides accounted for up to 71 per cent of the total volume and value of agricultural pesticides imported from the EU in 2018. In Brazil, by far the largest importer, the share of EU-banned pesticides made up 36 per cent of

the total import volume and value, and in five other countries this share exceeded 50 per cent: Mexico, Peru, Malaysia, Honduras and Sudan (see figure 3 page 20).

- In contrast, the EU-banned pesticides accounted for less than 8 per cent of the total value of agricultural pesticides exported by key EU exporters in 2018 and 2019 (with the exception of slightly higher shares for Italy and the Netherlands in 2018 – see details in section 2.1).

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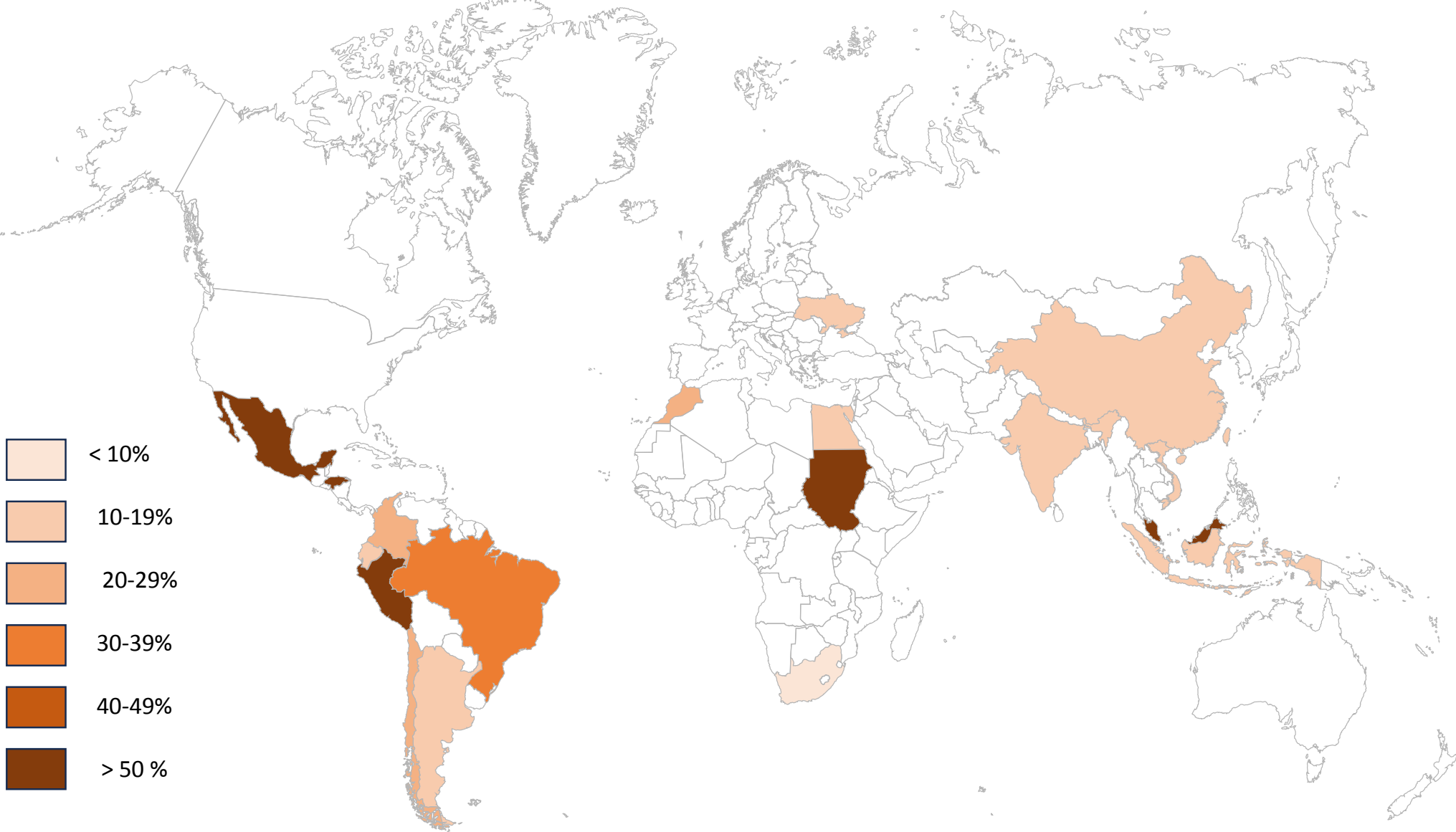


Figure 3. Share of EU-banned pesticides in the total value of agricultural pesticides imported in 2018 from seven key EU exporters, by country. *Source: BASIC.*

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3.2

The share of EU exports of banned agricultural pesticides at the global level

At the global level, several of the pesticides targeted by the export ban are known to be produced in large quantities in Europe. This can be ascertained by cross-referencing data on EU27 exports of currently banned pesticides with the global use of these same pesticides, based on Phillips McDougall data obtained by Public Eye and Uearthed.

These calculations were made in the following way:

1. **We estimated an average concentration ratio of the active substance for each product included in the top 20 agricultural pesticides exported from the EU27 in 2018**, based on the data obtained by Uearthed and Public Eye from regulators in Member States (as declared in export notifications and cross-checked with companies).

2. **Next, we multiplied the volume of agricultural pesticides exported from the EU27 in 2018 by this ratio** in order to estimate the tonnes of active substances exported for each EU-banned pesticide used for crop protection.
3. **Finally, we compared these estimates with the data on total tonnes of these same active substances used at the global level in 2018** (obtained from Phillips McDougall by Public Eye and Uearthed).

The estimates we obtained show that Europe accounts for a high to very high percentage of the world supply (in tonnes of active substances) for at least 12 substances that are banned in the EU. This ranges from 9 per cent of total alachlor exports to 100 per cent of Propisochlor and Zineb (see figure 4 below).

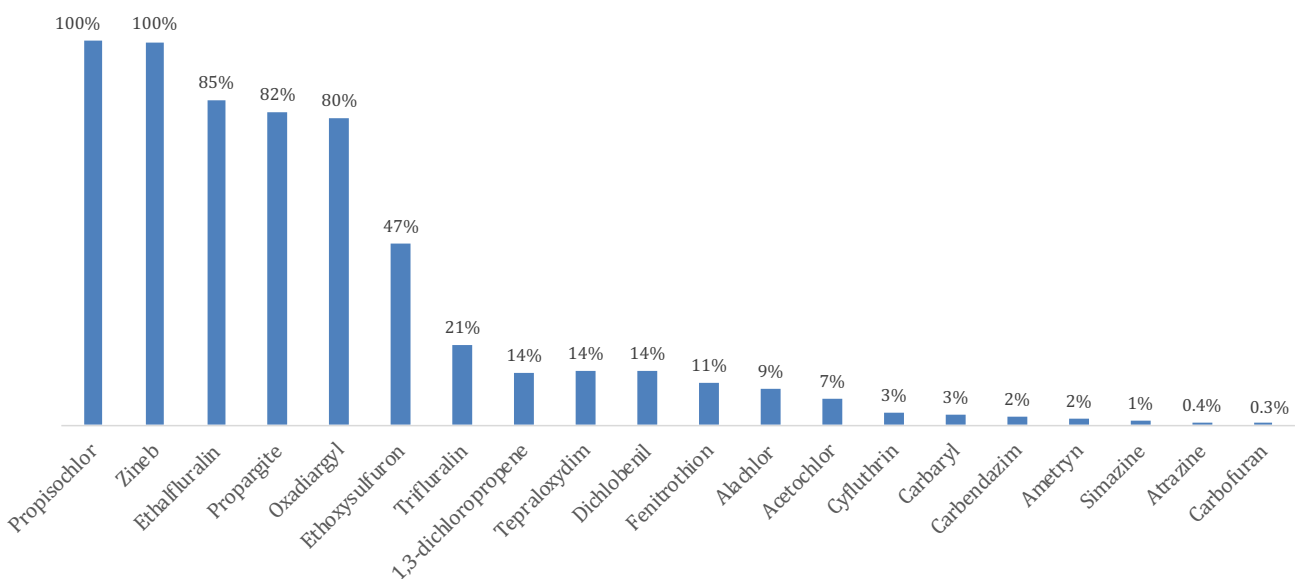


Figure 4. EU exports of pesticides as a percentage of global use (in tonnes of active substances, 2018).³⁵

³⁵ For the volume of pesticides produced in Europe, see Public Eye and Uearthed. "Pesticides interdits: l'hypocrisie de l'Union Européenne," 10 September 2020. For the global use volume, see Phillips McDougall, 2018.

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In addition to these figures, it is also important to mention the case of neonicotinoids. Research by Public Eye and Uearthed determined that in 2021, European countries exported approximately 2,930 tonnes of EU-banned neonicotinoids containing the active ingredients thiamethoxam, imidacloprid and clothianidin.³⁶ In 2018, global consumption of those three neonicotinoids was around 18,000 tonnes.³⁷ To bring this figure up to date, one can assume

that the global consumption of neonicotinoids decreased when the EU banned their use on EU soil. Based on this assumption, we can presume an approximate decrease of 5 per cent overall for a total of 17,100 tonnes based on the current EU share of the world market. We can then estimate that approximately 15 per cent of the world's annual consumption of these three substances is sourced in the European Union.

3.3 The toxicity of the most exported EU-banned agricultural pesticides

The data presented in the previous section demonstrates that for several substances, European exports of EU-banned pesticides are a key, if not a major, contributor to pesticide stocks and use in Low- and Middle-Income Countries.

This is particularly problematic in these countries, as their pesticide regulations are much less stringent than European regulations. As a result, exposure levels to these more toxic pesticides are much higher in these LMICs.³⁸

Here are a few key examples:

- **Recent estimates in Brazil** show that there were 14,000 cases of pesticide

poisoning in 2017, according to the Ministry of Health. Furthermore, there were an average of 4,763 cases of acute pesticide poisoning per year over the past three years, affecting more than 150 babies aged 0 to 12 months³⁹. “For each case reported, some 50 cases are not” noted Larissa Bombardi, a former researcher at the University of São.⁴⁰ With regard to environmental risks, 500 million bees died in 2018 in the space of three months, mainly due to exposure to neonicotinoids and fipronil, according to the Brazilian NGOs Agência Pública and Réporter Brasil.⁴¹

³⁶ Public Eye and Uearthed. “EU Sending Huge Quantities of Banned, Bee-Killing Pesticides to Poorer Countries, Documents Reveal,” 17 May 2023.

³⁷ Phillips McDougall, 2018.

³⁸ <https://www.publiceye.ch/fr/thematiques/pesticides/analyse-ventes-pesticides-2018/toxicite-chronique>

³⁹ Public Eye [The pesticides that poison farmers](#)

⁴⁰ Bombardi points out that «for every case reported, there are around 50 that are not”. https://inhabitants-tv.org/oct2018_colonialismomolecular/E-book_Atlas_Agrot%C3%B3xico_2017_Larissa_Bombardi.pdf and https://inhabitants-tv.org/oct2018_molecularcolonialismobrazil.html and https://docs.fct.unesp.br/nera/artigodomes/9artigodomes_2011.pdf

⁴¹ <https://www.publiceye.ch/fr/thematiques/pesticides/analyse-ventes-pesticides-2018/les-tueurs-dabeilles>

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- In India, another major consumer of products banned in the EU, exposure to pesticides is the second most frequent cause of accidental death after road accidents, accounting for around 7,000 deaths per year.⁴²

Taking a product-by-product approach, the data published by ECHA from 2018 to 2019 shows that **the most-exported EU-banned pesticides by volume are also some of the most toxic substances. Nonetheless, many have been the object of case-by-case authorisations, often based on weak scientific evidence and without serious consideration of the alternatives.**⁴³

The main toxicity impacts of EU-banned agricultural pesticides are summarised with more detail below:⁴⁴

1. **Dichloropropene (1,3-D):** a fumigant and nematicide. A demonstrated carcinogen, sometimes sold in combination with chloropicrin, another fumigant.
2. **Cyanamide:** used to trigger uniform flowering on fruit trees and vines; causes poisonings and is a likely carcinogen.
3. **Trifluralin:** a pre-emergent herbicide used to control annual grasses and broadleaf weeds. Classified as a Group C - Possible human carcinogen by the OPP Carcinogenicity Peer Review Committee in April 1986.
4. **Acetochlor:** a broad leaf herbicide and member of the chloracetanilide class.

Associated with increased risk of colorectal cancer among pesticide applicators with high lifetime use, and increased risk of lung cancer among regular users and sporadic users.

5. **Chlorate:** an inorganic salt herbicide that was first registered in 1966; used as a defoliant and a desiccant. A high intake of chlorate on a single day could be toxic for humans as it can limit the blood's ability to absorb oxygen, leading to kidney failure. Long-term exposure to chlorate in food, particularly in drinking water, is a potential health concern for children, especially those with mild or moderate iodine deficiency.
6. **Zineb:** a protectant fungicide that can create irritations of the nose and throat; repeated exposure may cause conjunctivitis.
7. **Propargite:** a pesticide used to kill mites (acaricide). Considered to be severely irritating to both the skin and eyes; can generate dermal sensitisation effects. Classified as a probable human carcinogen by the U.S. Environmental Protection Agency. Also, very toxic to aquatic life, with long-lasting effects.
8. **Ethalfuralin:** a selective herbicide used for the pre-emergent control of annual grasses and broadleaf weeds. Causes moderate eye irritation and moderate to severe skin irritation; has therefore been placed in Toxicity Category II (the second-highest of four acute toxicity categories). It also is a skin sensitiser.

⁴² Ibid.

⁴³ On exemptions, it is worth noting that a pesticide can be authorised for «emergency» reasons even if it has not been authorised to be placed on the market. One example is 1,3-Dichloropropene.

⁴⁴ Based on information from <https://echa.europa.eu/fr/substance-information>, <https://www.efsa.europa.eu> and information provided by Public Eye and PAN Europe.

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9. **Propisochlor:** a pre-emergent herbicide used to control annual grasses and broadleaf weeds. Harmful when coming in contact with skin; very toxic to aquatic life with long-lasting effects.
10. **Atrazine:** a systemic herbicide that is used to selectively control annual grasses and broadleaf weeds. It creates ubiquitous water contamination, induces endocrine disruption, and can cause cancer. Liver, kidney and heart damage has been observed in animals exposed to atrazine, as well as changes in blood hormone levels that affect ovulation and the ability to reproduce.
11. **Picosystrobin:** a preventative and curative fungicide. Very toxic to aquatic life, with long lasting effects. It causes serious eye irritation and is harmful if inhaled. Classified as having “suggestive evidence of carcinogenicity”.
12. **Chlorothalonil:** a best-selling fungicide and presumed human carcinogen. Identified as a “critical concern” in relation to the contamination of groundwater by metabolites.
13. **Chlorpyrifos:** an organophosphate insecticide, acaricide and miticide used primarily to control foliage and soil-borne insect pests. Scientific evidence has proven that it has caused adverse neurodevelopmental outcomes in children, with studies linking pre-birth exposure to the chemical with developmental delays, autism and reduction in IQ.
14. **Neonicotinoids:** active substances used in plant protection products to control harmful insects. They affect the central nervous system of insects, especially pollinators,

leading to eventual paralysis and death. Because they are systemic chemicals absorbed into the plant, neonicotinoids can be found in pollen and nectar, making them toxic to pollinators that feed on them. Neonicotinoids are highly toxic in small quantities to bees. The potentially long-lasting presence of neonicotinoids in plants makes it possible for these chemicals to harm pollinators even when the initial application is made months before the bloom period.

In combination with these high levels of toxicity, **other factors contribute to amplifying the negative impacts** generated by the export of EU-banned pesticides for agricultural use in Low- and Middle-Income Countries:

- In the EU, there are specific rules for the use of pesticides aimed at providing the minimum level of safety on their use and impact. Therefore, pesticides are approved for use in EU Member States under the assumption of standard conditions of use following “good agricultural practice” (GAP), whereas agricultural land must fulfil “good agricultural and environmental conditions” (GAEC).
- In Low- and Middle-Income Countries, a **higher proportion of the population works in agriculture**.
- In many of these countries, **the people who spray pesticides are employed for several hours a day and they often receive no specific training**. For example, 43 per cent of Asian farmers surveyed by PAN Asia Pacific in 2019 sprayed

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pesticides against the wind, bringing them into direct contact with the substances.⁴⁵ What's more, the proportion of illiterate people is often higher in these countries, which severely limits their ability to be informed about the risks of pesticide use (labels and pictograms are not always sufficient).⁴⁶

- Concerning the prevention of harm, a large proportion of farmers in Low- and Middle-Income Countries do not invest in protective equipment, often due to low income. Furthermore, many farm workers are not provided with protection by their employers.⁴⁷ For example, more than 80 per cent of farmers in Asia do not wear protective equipment, partly due to a lack of financial resources and partly due to heat and humidity.⁴⁸ In addition, low incomes also mean that pesticide spraying equipment does not meet EU technical standards. Finally, performance control is not carried out on a regular basis. Based on these factors, the risk of pesticide contamination is higher. For example,

80 per cent of Asian farmers surveyed by PAN Asia Pacific were in direct contact with pesticides due to faulty containers or sprayers.⁴⁹ Also, scientific research shows that the protective equipment that farmworkers are supposed to wear is not fit for purpose.⁵⁰

- Finally, **farmers' low incomes often mean that children are more involved in farm work, which brings increased risks of pesticide exposure.** Children generally work without protective equipment, and due to their age, they are more vulnerable to pesticides and the health impacts are more serious.

As a result of the combination of these risk factors, it is clear that an end to exports of EU-banned pesticides would have an important positive impact on many Low- and Middle-Income Countries, and more widely to all other destination countries given the serious negative health and environmental impacts of these products.

⁴⁵ PAN Asia Pacific. "Highly hazardous pesticide use & impacts in Asia: the need for legally binding protocols beyond 2020," 2019.

⁴⁶ Jepson et al. "Measuring pesticide ecological and health risks in West African agriculture to establish an enabling environment for sustainable intensification," 2014.

⁴⁷ Le Bars, M., Sissako, A., Maïga, A., and Koita, O. "Usages des pesticides en zone cotonnière du Mali: quels impacts sur la santé des applicateurs?" International Conference Plants Pesticides (ICPP), Yamoussoukro, Côte d'Ivoire, July 2022 and Le Bars, M., Sissako, A., de Montgolfier, A., Sidibe, Y., Diarra, A., Sagara, A., and Koita, O. "Usage des pesticides et impacts sur la santé des applicateurs en zone cotonnière du Mali," 2022; Cah. Agric. 31: 24, <https://doi.org/10.1051/cagri/2022023>; Public Eye. "Ces pesticides qui empoisonnent les agriculteurs: les ventes de pesticides à la toxicité aiguë," 2019.

⁴⁸ Gupta, A. "Pesticide use in South and South-East Asia: Environmental Public Health and Legal Concerns," 2012.

⁴⁹ PAN Asia Pacific. "Highly hazardous pesticide use & impacts in Asia: the need for legally binding protocols beyond 2020," 2019.

⁵⁰ <https://www.ir-d.dk/2022/02/poisoned-farmers-exposing-the-myth-of-pesticide-protection/> accessed on 11 December 2023.

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3.4 The export ban as a key piece in the wider EU strategy to foster the phase out of the use of highly hazardous pesticides at global level

The facts and figures detailed in the previous sections demonstrate that stopping the exports of agricultural pesticides banned in the EU would put only a marginal number of jobs at risk, whereas current imports of these products by **Low- and Middle-Income Countries** pose very significant threats to their environments and the health of their populations.

Opponents of this initiative argue that an EU export ban would simply result in import countries turning to other suppliers (i.e. non-EU exporting countries), potentially through the subsidiaries of the same manufacturing companies that are located outside Europe.

While this risk is real, **there are ways for the European Union to act simultaneously on other leverage points in order to strengthen the effects of the export ban and to foster a progressive phase-out** of the use of highly hazardous agricultural pesticides at global level.

The first leverage point involves taking action against the import of agri-food products that are produced with banned pesticides and/or feature residues of banned pesticides.⁵¹ This

prohibits the use of those pesticides to produce agri-food products exported to the EU, and hence discourages producers from buying them even if they are available outside the EU. This is a powerful incentive for foreign countries to move away from the use of highly hazardous pesticides in farming and towards the use of safer alternatives.

In 2020, PAN Europe published an analysis of the 2018 official food monitoring data of pesticide residues monitored by EU Member States.⁵² This analysis showed that residues of 74 pesticides that have been banned for use in the EU due to health and environmental concerns were found in 5811 food samples (6.2 per cent of all samples tested), the majority of which were plant-based products (75.2 per cent). Exotic fruits sold in Europe including guavas (85 per cent), goji berries (55 per cent), breadfruit (42 per cent) and cherimoyas (40 per cent) are at the top of the list, together with teas (37 per cent), peppercorns (29 per cent) and coriander leaves (25 per cent). More recently, products such as honey, chicken eggs and bovine fat have tested above Maximum Residue Limits (MRLs) for

⁵¹ See Veblen Institute. "Neonicotinoid pesticides: how can European mirror measures be made more ambitious?", 2023; Veblen Institute. "Mirror measures: key tools for implementing the European Green Deal", 2023; Veblen Institute, FNH, Interbev. "[Pourquoi est-il urgent de mettre en place des mesures-miroirs?](#)", 2024; and <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0208&from=EN>

⁵² https://www.pan-europe.info/sites/pan-europe.info/files/Report_Banned%20pesticides%20in%20EU%20food_Final.pdf, accessed on 21 February 2024.

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several EU-banned pesticides in 2021, triggering legal action or enforcement actions.⁵³

It is clear that by taking action against the residues of banned pesticides in EU imported food and agricultural products, **the EU can strongly influence the use of these pesticides in foreign countries. In this way, companies will no longer be able to use them on agri-food products exported to the EU, which constitutes one of the largest importers of agri-food products worldwide.**⁵⁴

The case of paraquat offers a good example of the capacity of the European Union to lead the way for a phase-out in the use of highly

hazardous pesticides.

The EU was a forerunner in removing the authorisation for paraquat. **Paraquat was banned in 2007 in the entire EU**, including (at the time) the United Kingdom, where Gramoxone, Syngenta's paraquat product, is manufactured.⁵⁵ **The following year, in 2008, the EU lowered its Maximum Residue Level (MRL) for food products to the lowest level of quantification.**⁵⁶

Paraquat is highly toxic to humans, even in small quantities. This was the initial reason for it being banned in the 1980s and 1990s in a number of European countries.⁵⁷ Things accelerated when studies showing a link to Parkinson's Disease



⁵³ European Food Safety Authority (EFSA) et al. "The 2021 European Union Report on Pesticide Residues in Food," EFSA Journal 21, 2023.

⁵⁴ https://ec.europa.eu/commission/presscorner/detail/en/IP_21_4584

⁵⁵ Repórter Brasil. "Empresas Estrangeiras Desovam No Brasil Agrotóxico Proibido Em Seus Próprios Países," 19 December 2019.

⁵⁶ <https://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/start/screen/mrls/searchpr>, accessed on 21 February 2024.

⁵⁷ Gunnell et al. "Prevention of Suicide with Regulations Aimed at Restricting Access to Highly Hazardous Pesticides: A Systematic Review of the International Evidence," 2017.

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were published in the late 1990s and early 2000s.⁵⁸ This led to an EU-wide ban in 2007.

Brazil undertook a 10-year toxicological review in 2008, which led in 2017 to a ban on paraquat via a three-year phase-out.⁵⁹ Paraquat was definitively banned on 22 September 2020 with a derogation for the 2020/2021 growing season.⁶⁰ In 2012, China took the same route as the EU by announcing a domestic ban on paraquat.⁶¹ Production and sale of paraquat on the domestic market has been banned since 1 July 2014, and the sale or use of paraquat in aqueous solution was banned as of 1 July 2016.⁶²

By 2021, paraquat had also been banned in the

following **East Asian countries** to prevent suicide by pesticide consumption, as well as to address environmental and human health concerns.⁶³

- South Korea (phased out in 2011, banned in 2012)⁶⁴
- Vietnam (2017, with two-year phase-out)⁶⁵
- Malaysia (definitively banned in 2020)⁶⁶
- Taiwan (phase out beginning in 2018, banned in 2020)⁶⁷
- Thailand (voted for ban in 2019, implemented 2021)⁶⁸

Figure 6 below illustrates the spread of paraquat bans from the 1980s to today in map form.

⁵⁸ See for instance the many early/mid-2000s studies in the references to the 2019 publication “Paraquat Exposure and Parkinson’s Disease: A Systematic Review and Meta-Analysis” by Tangamornsuksan et al.

⁵⁹ AgroPages. “Brazil Anvisa Bans Paraquat,” 12 October 2017.

⁶⁰ Albrecht et al. “Agronomic Implications of Paraquat Ban in Brazil,” 2022.

⁶¹ PAN China. “PAN China Takes down Paraquat,” 2 May 2012.

⁶² AgriBusiness Global. “Will China’s Diquat Market Profit from the Ban on Paraquat?,” 20 October 2015.

⁶³ Taipei Times. “Follow Paraquat Ban with Action,” 22 February 2020. There is an abundance of literature on the impacts of paraquat bans due to suicide by paraquat ingestion in these East Asian countries.

⁶⁴ Cha et al. “Impact of Paraquat Regulation on Suicide in South Korea,” 2016.

⁶⁵ Việt Nam News. “Dangerous Weedkiller Still Used despite Ban,” 4 July 2019.

⁶⁶ The Centre for Pesticide Suicide Prevention. “Malaysia,” 10 May 2022.

⁶⁷ Chang et al. “The Early Impact of Paraquat Ban on Suicide in Taiwan,” 2022.

⁶⁸ USDA Foreign Agricultural Service’s Global Agricultural Information Network (GAIN). “Thai FDA Announced Ban of Paraquat and Chlorpyrifos on Imported Food Products,” 3 November 2020.

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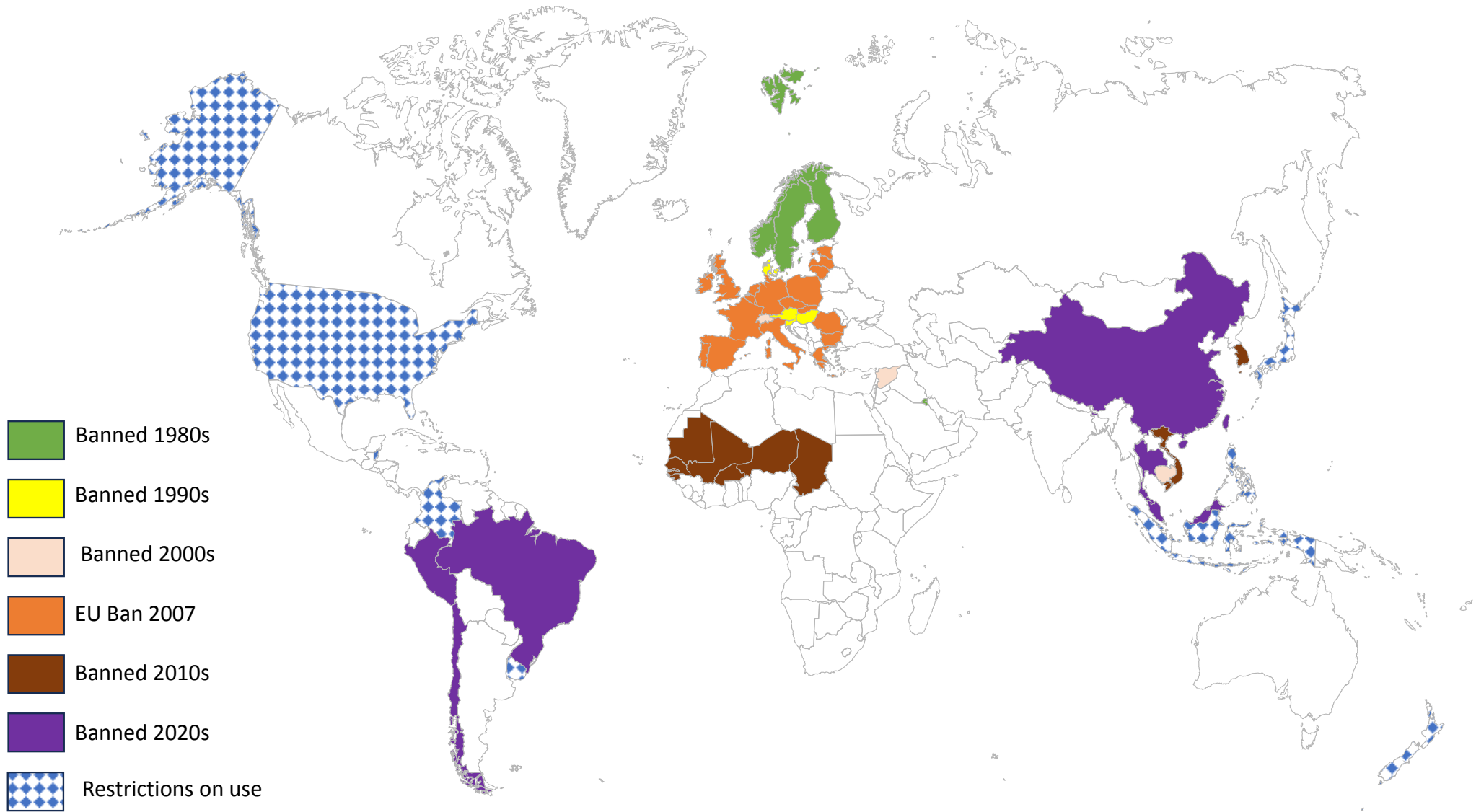


Figure 6. Progression of paraquat bans worldwide from the 1980s to the 2020s, and restrictions on use as of 2007 (bans on aerial use or use under professional supervision only).

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Today, paraquat (paraquat and paraquat dichloride) is banned in 58 countries, including Burkina Faso, Mali, Niger, Tchad, Senegal, Gambia, Guinea Bissau, Republic of South of Korea, Lao PDR, Kuwait, Chile and Peru.⁶⁹

This example shows the **capacity of the EU to lead other countries in the further reduction of the global supply and use of highly hazardous agricultural pesticides**, and is a testimony to the potential role of the European Union as the world's benchmark setter for chemical regulation.

This role could be further accelerated by the capacity of the EU to inspire not only the regulative decisions of foreign countries but also the requirements of the certifications used by retailers and food manufacturers in their supply chains. For example, the following certifications that include restrictions on pesticides as part of their standards are based on the EU list of banned agricultural pesticides as a reference benchmark:

- **Fairtrade** publishes a “Red List of Hazardous Materials” that includes 220 pesticides that cannot be used on Fair

Trade products. The document also includes an “orange list” of 29 pesticides that are scheduled to be banned in the near future.⁷⁰

- **Rainforest Alliance** publishes a list of 159 pesticides that are forbidden for use, alongside an additional 24 “obsolete” pesticides that are also forbidden.⁷¹
- The **Forest Stewardship Council** publishes a list of 48 banned pesticides alongside 120 “highly restricted” and 221 “restricted” pesticides,⁷² for which an Environmental and Social Risk Assessment (ESRA) and derogation is required to maintain the FSC standard.⁷³
- The **Common Code for the Coffee Community (4C)** maintains a pesticide blacklist (30 unacceptable pesticides that cannot be used with the 4C certification) as well as an 80-item “red list” (must be phased out within three years of obtaining certification).⁷⁴
- The **Better Cotton** initiative recently added a requirement to phase out the use of Highly Hazardous Pesticides.⁷⁵

⁶⁹ <https://files.panap.net/resources/PAN-Consolidated-List-of-Bans.xlsx>
<https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides>
https://www.insah.org/doc/pdf/decision_interdiction_Paraquat.pdf

⁷⁰ Fair Trade. “Hazardous Materials List,” 2016.

⁷¹ Rainforest Alliance. “Rainforest Alliance Lists For Pesticide Management - Lists Of Prohibited And Risk Mitigation Use Pesticides. ANNEX CHAPTER 4: Farming. Document SA-S-SD-22,” 1 July 2022.

⁷² Forest Stewardship Council. “FSC Lists of Highly Hazardous Pesticides - FSC-POL-30-001a EN,” 1 May 2019.

⁷³ Forest Stewardship Council. “Frequently Asked Questions - FSC Pesticides Policy - FSC-POL-30-001 V3-0 EN,” 12 November 2019.

⁷⁴ 4C Services GmbH. “4C Pesticide Lists,” 20 January 2024.

⁷⁵ The list of prohibited pesticides is meant to be based on the following: “Pesticides considered prohibited under this Indicator include those in Annex A and B of the Stockholm Convention, Annexes of the Montreal Protocol or Annex III of the Rotterdam Convention. Prohibited pesticides also include those defined as ‘acute toxic’ category 1 or 2 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) or under 1a and 1b of the WHO classification.” Better Cotton. “Better Cotton Principles and Criteria v.3.0, Applicable as of 1 March 2024,” 7 February 2023.

EU pesticides export ban: what would be the consequences?



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