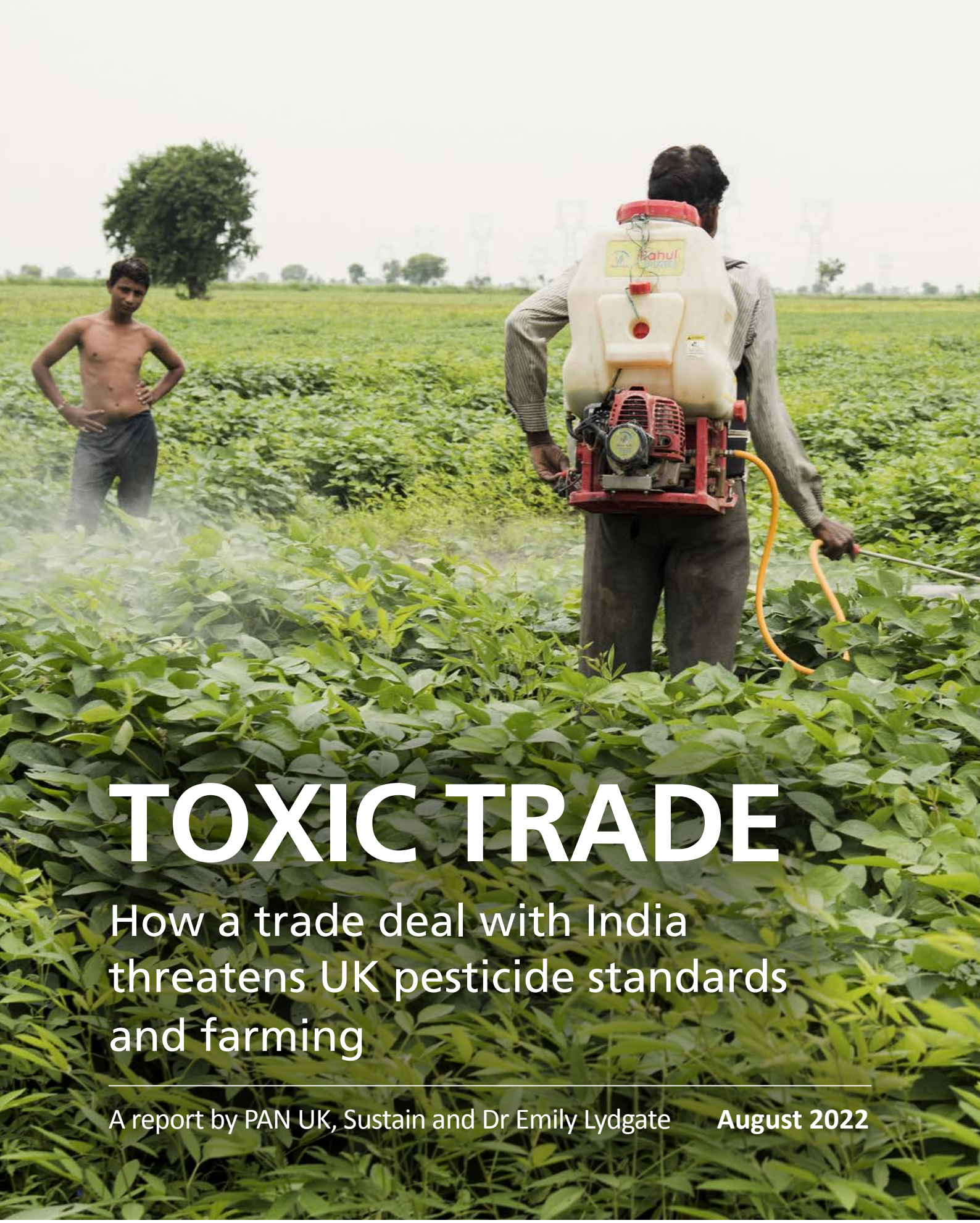

TOXIC TRADE

How a trade deal with India threatens UK pesticide standards and farming

A report by PAN UK, Sustain and Dr Emily Lydgate **August 2022**

PESTICIDE ACTION NETWORK UK

sustain
the alliance for better food and farming

KEY ACRONYMS

CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
EDC	Endocrine disrupting chemical
FTA	Free Trade Agreement
HHP	Highly Hazardous Pesticides
HYV	High Yielding Variety (seeds)
IPM	Integrated Pest Management
MRL	Maximum Residue Level
PPE	Personal Protective Equipment
SHPF	Severely Hazardous Pesticide Formulations
SPS	Sanitary and Phytosanitary
TAC	Trade and Agriculture Commission
TRQ	Tariff-Rate Quota
USMCA	United States-Mexico-Canada Agreement
WTO	World Trade Organization

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Agricultural workers spraying pesticide in soybean fields, Maharashtra, India. Credit: CRS Photo / Shutterstock.com.

CONTENTS

04 Executive summary and key recommendations

09 Introduction

11 Threats to UK pesticide standards

- Amount of pesticide in UK food could increase
- UK could face pressure to approve or reapprove harmful pesticides

21 Threats to UK farming

23 Reasons the UK should be especially concerned about an FTA with India

- India's MRL exceedances and the UK's weak residue testing regime
- India's aggressive lobbying power and attempts to weaken international pesticide standards

27 Pesticides in India

- Pesticide harms on the ground
  - Unintentional Poisonings
  - Farmer debt and suicide
- Legislative framework

31 Negotiating a UK-India FTA: how to prevent harms from pesticides

- Do not liberalise agricultural products where there is evidence of pesticide-related harms
- Negotiate FTA provisions that reinforce the UK's right to regulate for environmental and health objective

33 Full recommendations

35 Annex: List of data sources

37 References

EXECUTIVE SUMMARY*

The UK and India are in the midst of negotiating a comprehensive Free Trade Agreement, with the UK Government aiming to "double trade with India by 2030". Negotiations between the two countries kicked off in January 2022 and aim to conclude, in record time, by October.

Trade deals encourage regulatory alignment on a wide range of issues, including pesticides. While far from perfect, UK pesticide standards are considerably stronger than India's in terms of protecting human health and the environment. As a result, a UK-India Free Trade Agreement (FTA) presents a risk to the health of UK citizens and the environment. This is particularly true in the case of India which, as one the world's largest agricultural producers and exporters, has an economic interest in weakening UK pesticide standards in order to ease access to the UK market for their food exports.

Despite India's status as one of the world's agricultural powerhouses, UK imports of Indian agri-food are currently fairly low, leaving potential for a major increase under new trading arrangements. While the UK does apply tariffs to some Indian agri-food imports, much of its produce (including rice, wheat and tea) already comes into the UK tariff-free. As a result, Indian negotiators are likely to focus on removing non-tariff (or regulatory) barriers which would almost certainly include pressure on the UK to facilitate Indian exports by allowing larger amounts of more toxic pesticides in food.

What are the risks for human health and the environment in the UK?

If the UK Government bows to demands from Indian negotiators then the increased risk to the health of UK consumers could be significant. India tends to allow larger amounts of Highly Hazardous Pesticides (HHPs) to appear in food than the UK. As just two of many examples included in this report, Indian apples and grapes are both permitted to contain 200 times the amount of the insecticide malathion than their UK equivalents. Malathion is a carcinogen and cholinesterase inhibitor. It is also a suspected endocrine disrupter which means it interferes with hormone systems and can cause birth defects, developmental disorders and reproductive problems such as infertility.

Exacerbating this risk to UK consumers is India's ongoing issue with its agricultural exports containing illegally high levels of pesticide residues. As a result, Indian exporters face problems with shipments of food being rejected by importing countries. While the list of Indian produce being rejected includes mangos, chillies and spices, the most problematic crop has proven to be basmati rice. In 2021, as much as 200 tonnes of Indian basmati rice was being rejected every month due to pesticide residues that exceeded the national limits of a wide list of countries including Egypt, Lebanon and Yemen.

Meanwhile, the ability of the UK's border testing regime to keep Indian food containing illegally high levels of pesticides off UK shelves is highly questionable. Just four Indian products (curry leaves, okra, peppers and sesame seed) are flagged as requiring automatic testing. Despite the significant issues around residues in rice, it is not included in this list. The UK pesticide residue testing regime does not appear to have experienced a major rise in investment nor staff capacity since EU exit, despite the significant additional border control challenges it has brought. As a result, it is unlikely that the UK has the infrastructure and resources required to adequately test produce imported from India for pesticide residues.

In addition to the risks around pesticides in food, an FTA with India also threatens to undermine the way in which the UK decides which pesticides to approve for use. The UK currently takes a far more precautionary approach to approvals than India, meaning that it is more likely to ban a pesticide due to the harms it causes to human health or the environment. The outcome of these different approaches to approvals is plain to see. India allows the use of 62% more HHPs than the UK (118 to the

* Unless provided, all references for the executive summary are to be found in the main body of the report

UK's 73) which has banned many of the chemicals in question due to concerns over their impact. The list of pesticides banned in the UK but still used in India includes chlorpyrifos which has been shown to negatively affect children's brain development, and neonicotinoids which are notorious for driving global declines in bee populations. When a pesticide is banned for use in the UK, it is theoretically not allowed to appear in food, thereby restricting imports. As a result, Indian agribusiness would have much to gain if the UK agreed to weaken its approach by approving new harmful pesticides or overturning existing bans.

What are the risks for UK farming?

As well as posing a risk to health and environment in the UK, an FTA with India could also threaten the future of UK agriculture. If the UK Government agrees to weaken domestic standards in order to facilitate imports from India, thereby encouraging British farmers to start using currently banned pesticides, then UK exports will struggle to meet EU standards. Given that the EU remains the UK's primary agricultural export destination, accounting for roughly 60%, this could have a devastating impact on the UK farming sector.

Equally concerning, Indian farmers growing crops that can be produced in the UK (such as wheat, onions, apples and sugar) are able to operate more cheaply using harmful pesticides that are banned in the UK, giving them a competitive advantage over UK producers. In some cases, the UK allows residues of banned pesticides to appear in food imports. For example, a UK apple producer is not allowed to use the fungicide carbendazim which has been banned for domestic use since 2017. However, imported apples are allowed to contain residues of up to 0.2 milligrams per kilogram of carbendazim.

The UK Government's own Trade and Agriculture Commission has highlighted this double standard as one of the key issues with both the Australia and New Zealand FTAs, the only new trade agreements to have been signed by the UK since EU exit. As India is one of the world's largest agricultural producers, this competitive advantage is likely to cause much greater problems for UK farmers under a UK-India FTA. In fact, the UK Government's own impact assessment has projected that there will be a fall of around £10m in domestic agricultural output if a trade deal is agreed with India.

What is the potential for driving pesticide harms in India?

In addition to threatening to undermine UK pesticide standards, a UK-India FTA also risks driving pesticide-related harms on the ground in India where the food is grown.

India is the world's second highest user of pesticides and has one of the highest rates of unintentional pesticide poisoning, with roughly 30,000 fatalities every year. There are many instances of pesticides causing other health problems, such as the well-documented cases of children born with birth defects in the cashew growing area of Kerala. India also suffers from high rates of farmers committing suicide by swallowing pesticides. Pesticides are, in many cases, both the means and the cause of these suicides as farmers buy agrochemicals on credit but find that yields are too meagre to pay off the costs.

While some argue that the UK's residue limits for food imports (known as Maximum Residue Levels – MRLs) prevent the worst impacts of pesticides, they do nothing to protect against harms where crops are grown. This is because it is perfectly possible to use harmful pesticides without the chemicals in question turning up as residues in the final product. Consequently, the Indian population, its wildlife and natural environment more broadly, can be exposed to highly toxic substances used to grow food consumed in the UK. This is, at best, a double standard and, at worst, a reckless disregard for the rights of others to live a life free from the health and environmental problems associated with pesticide use.

In contrast to the majority of Indian agriculture which remains dependent on pesticides, there have been some positive shifts in recent years, including a boom in organic farming which saw India's organic exports grow by 50% between 2017 and 2019. A UK-India FTA could help support organic initiatives in India while also benefitting UK consumers by increasing their access to healthy and sustainably produced food. Conversely, if UK negotiators agree to weaken UK pesticide standards, thereby incentivising an increase in Indian agri-food exports, then UK diets are likely to contribute to further increases in pesticide-related harms in India.

How does the UK's current approach to pesticides differ from India's?

There are a range of differences between the ways in which the UK and India have chosen to govern pesticides. Arguably the most fundamental is that the UK takes an approach based on the view that some pesticides are intrinsically hazardous and therefore simply too dangerous to be in use (the so-called 'hazard-based approach). In contrast, India follows a 'risk-based approach' based on a belief that almost all risks associated to pesticide use can be effectively managed. This is despite the country suffering from weak governance and enforcement, high poverty levels and low literacy rates which mean that many Indian farmers struggle to read the label on a pesticide product to ensure they are using it properly, let alone access the required Personal Protective Equipment.

In contrast to the UK, India's risk assessment for pesticides only considers the harmful impacts on plants and animals, ignoring adverse human health effects and water contamination. India also has no mechanism for post-approval review of pesticides meaning that some pesticides authorised in the 1970s are still in use, regardless of new evidence regarding negative health or environmental impacts. Again, this is very different to the UK's approach under which all pesticides have to be reapproved every fifteen years.

Why should UK negotiators be particularly concerned about an FTA with India?

During FTA negotiations, it is crucial that the UK Government is aware of India's long history of obstructing both regional and international efforts to regulate pesticides, particularly those that threaten trade. The Indian Government has long pushed for the EU to weaken its pesticide standards to remove what it views as a non-tariff barrier to trade. India also has a track record of obstructing international efforts on pesticides and has been known to appoint pesticide industry personnel to its official treaty delegations. It is one of just a handful of countries that has chosen to repeatedly obstruct global attempts to regulate a number of Highly Hazardous Pesticides, including some which have been linked with fatal poisonings such as carbosulfan, carbofuran and the infamous herbicide paraquat.

While an FTA with any country with weaker pesticide protections presents a considerable risk to the health of UK citizens and the environment, the UK Government should be particularly concerned about the potential for a deal with India to increase pesticide-related harms. With Indian food exports regularly containing high levels of pesticide residues, and the UK border control system seemingly under-resourced and in flux due to EU exit, it is highly likely that a rise in Indian food exports incentivised by an FTA will result in the increased exposure of UK consumers to harmful pesticides. Rushing through negotiations on a complex FTA in less than a year with a government known to aggressively lobby to weaken pesticide standards only increases that risk.

The UK Government has repeatedly promised not to sign a trade deal which compromises on existing food standards. However, whether India will agree to an FTA that does not grant them significantly more access to the UK market for their food exports remains to be seen.

Key recommendations for the UK Government *

- Do not allow any weakening of UK pesticide standards via a UK-India FTA. This must include:
  - » Ensuring that no currently banned pesticides are allowed for use in the UK
  - » Ensure that food containing detectable residues of currently banned substances cannot be imported into the UK
  - » Ensure that Maximum Residue Levels are maintained or reduced.
- The UK Government and the Trade and Agriculture Commission should undertake and publish detailed assessments on the likely impacts of a UK-India FTA on pesticide use in both countries and the associated public health and environmental impacts.
- Prevent UK farmers from being disadvantaged by cheap food imports produced to weaker pesticide standards in India. In particular, the UK must address the potential competitive threat to UK farmers by not allowing food imports grown using pesticides banned for use domestically.
- The UK should not liberalise (phase out Tariff Rate Quotas) for Indian products that have a proven track record of violating Maximum Residue Level legal requirements or driving pesticide-related harms to human health or the environment in India.
- The UK should ensure that its borders are adequately resourced to ensure that products with illegal levels of pesticide residue aren't circulating in the UK.
- The UK Government should reject clauses in a UK-India FTA which create additional obligations to justify taking a less stringent approach to protecting human health and the environment from pesticides.

Please note: specific language to include and avoid in a UK-India FTA so that pesticide standards are maintained is listed on page 32.

* See page 33 for full recommendations

Crane lifting cargo from a truck into a ship at seaport terminal for export. Credit Mr Kosal / Shutterstock.com

INTRODUCTION

According to the UK Government, the UK's trading relationship with India was worth £24.3 billion in 2021.[1] India is fifteenth in terms of countries from which the UK sources imports, and seventeenth in the list of UK export destinations.[2]

Despite this relatively significant trading relationship, and India's status as one of the world's biggest agricultural producers and ninth largest food exporter, UK imports of Indian agri-food are currently fairly low. Of UK imports from India totalling £9.39 billion in 2021, less than £750 million (roughly 8%) could be categorised as agri-food. More than half of the total agri-food imports were in just three categories, with cereal imports from India totalling £140 million, seafood £120 million and 'coffee, tea and spices' £116 million. Less significantly, vegetables and fruit imports were worth around £70 million and 'sugar and sugar confectionary' £25 million.[3] These low export figures coupled with India's status as a large agricultural producer indicate that under a UK-India FTA there could be potential for a major increase in UK imports of Indian agricultural products.

Stating an ambition to "double trade with India by 2030", the UK and Indian Governments kicked off formal trade negotiations in January 2022.[4] As of July 2022, four rounds of negotiations have taken place and both governments have reportedly expressed a common desire to complete the deal by Diwali on 24th October 2022.[5] While this is an extremely short timescale for concluding a comprehensive FTA between two of the world's largest and most complex economies, in July 2022, India's Commerce Minister told journalists that negotiators were on track to meet the October deadline and that 11 out of a total of 26 chapters had already been agreed.[6]

Removing what each country sees as the other's current unfair barriers to trade is far from straightforward. While the UK Government's strategic approach to the UK-India FTA commits to upholding "our high environmental, labour, food safety and animal welfare standards", it also lists "reduced barriers to trade in goods" as the first key benefit of the deal and includes the removal of tariffs on British agri-food exports as a key objective.[7]

Farmers refilling sprayers in Katni Madhya Pradesh, India. Credit Neeraz Chaturvedi / Shutterstock.com.

However, it is highly unlikely that Indian negotiators would agree to eliminate tariffs on UK agri-food exports to India without securing significant benefits in terms of trading arrangements for their own agri-food exports in return. While the UK does currently apply tariffs to some Indian agri-food exports such as grapes, apples and onions, others like basmati rice, wheat and tea already come into the UK tariff free. As a result, Indian negotiators are likely to focus on calling for the removal of non-tariff (regulatory) barriers. With regards to pesticides, this is likely to include pressure on the UK to raise its Maximum Residue Levels and allow residues of pesticides currently banned from appearing in food consumed in the UK. This could potentially increase the threat to UK domestic pesticide standards.

Meanwhile, the Indian Government has highlighted the UK's comparatively high food safety standards as problematic, describing them as 'non-tariff barriers' and calling for their removal. Their complaints long predate the launch of formal trade negotiations between the two countries. A report from the Indian and UK Governments that was leaked in 2018 reveals the Indian Government complaining about UK pesticide standards and arguing that the UK should be prepared to relax EU rules on food standards and chemical safety as part of a new trading relationship with India.[8]

It is no wonder therefore that pesticides, and food standards more broadly, have proven to be a sticking point in negotiations between the two countries. In November 2021, before formal talks even launched, UK Government sources told reporters that momentum on the deal had "slowed down" due to concerns over India's food standards, with India's lax rules on pesticides listed as one of the key issues.[9]

This would not be the first time that India's approach to pesticides has hampered its ability to sign an FTA. The EU and India began trade talks in 2007 but stalled in 2013 over a range of issues including agri-food exports and differences in food standards.[10] India and the EU are yet to sign a comprehensive FTA but it was announced in June 2022 that conversations are gaining momentum and that both sides hope to finalise a deal in 2024.[11]

It is arguably unfortunate that, under the current timetable, the UK-India FTA is set to be agreed first. As a result, the UK Government won't have the opportunity to learn from the EU's experience of attempting to agree an FTA with India while maintaining its own pesticide standards.

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THREATS TO UK PESTICIDE STANDARDS

Trade deals encourage regulatory alignment on a wide range of issues including pesticides. While far from perfect, UK pesticide standards are currently some of the strongest outside of the EU in terms of protecting human health and the environment. As a result, trade agreements with non-EU countries could present a risk to the health of UK citizens and the environment. This is particularly true in the case of major agricultural exporters like India which was the ninth largest exporter of food in the world in 2020.[12] Such countries have a strong economic interest in pressuring the UK Government to weaken domestic pesticide standards in order secure access to the UK market for their food exports.

Credit: Matthew Dixon / Shutterstock.com

Amount of pesticide in UK food could increase

For approved pesticides, the UK and India (like almost all other countries) set what's known as Maximum Residue Levels (MRLs) crop-by-crop. A general examination of Indian MRLs for all pesticides provides little insight, because there are examples of Indian MRLs that are both higher and lower than those in the UK. However, a closer look solely at Highly Hazardous Pesticides (HHPs) – a UN concept used to identify pesticides with high potential to cause harm to human health or the environment – reveals that India tends to allow larger amounts of chemicals to appear in food than the UK, and is therefore generally less protective of consumer health.

As a result of these MRL discrepancies, UK trade negotiators are likely to come under pressure from their Indian counterparts to weaken UK MRLs in order to allow Indian food imports containing higher residues than currently permitted. By comparing MRLs for HHPs we are therefore able to see where potential threats to consumer protection and human health are likely to emerge in the UK.

The UK may also come under pressure from India to revert to minimum international standards (which in the case of pesticides come from the Codex Alimentarius[13], a set of food standards under the UN's Food and Agriculture Organization and World Health Organization). The Codex has a history of setting weaker safety standards than the UK, including on pesticide MRLs, and has been widely criticised for prioritising free trade over concerns around consumer health and for ignoring the precautionary principle in decision-making.

The following tables compare UK and Indian MRLs for a selection of Highly Hazardous Pesticides on key Indian export crops. The crops chosen are either already significant exports from India to the UK, or would be likely to increase under a UK-India FTA.

Rice

India is the world's top rice exporter and the UK is the world's 8th largest importer of rice. In 2020, the UK imported approximately £160 million worth of rice from India.[14] The Indian government has listed an increase in rice exports as one of its key objectives for a UK-India FTA.[15]

There are frequent MRL exceedances found particularly on basmati rice imported to the UK, the vast majority of which is likely to come from India.[16] However, its provenance can be hard to discern since basmati rice grown in India but packed in the UK often lists the UK as its country of origin.

The UK does not apply a tariff to imports of Indian basmati rice.[17] Despite this, a UK-India FTA could lead to a rise in UK rice imports from India by creating a more predictable and transparent trading environment which encourages Indian exporters to increase their focus on the UK market.

As the table below shows there are numerous pesticides used on Indian rice that could pose a potential health risk to UK consumers.

Table 1: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on rice

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
Acephate	0.01	1	X 100	• Carcinogen • Suspected Endocrine Disruptor • Cholinesterase Inhibitor
Bifenthrin	0.01	0.05	X 5	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin
Captan	0.07	0.3	X 4	• Carcinogen
Carbaryl	0.5	2	X 4	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin • Cholinesterase Inhibitor
Carbendazim	0.01	2	X 200	• Carcinogen • Suspected Endocrine Disruptor
Carbofuran	0.01	0.1	X 10	• Suspected Endocrine Disruptor
Chlorpyrifos	0.01	0.5	X 50	• Carcinogen • Developmental or Reproductive Toxin • Cholinesterase Inhibitor
Mancozeb	0.05	0.5	X 10	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin
Paraquat	0.05	0.1	X 2	• Acutely toxic • Suspected Endocrine Disruptor

See the Annex for references to the data in this table

Wheat

Wheat is one of the world's most important commodities, a fact highlighted by the current situation in Ukraine. India is the world's second biggest producer of wheat after China.[18] At present UK wheat imports come mainly from Canada and parts of Europe, including Ukraine. There is very little wheat imported from India. Like basmati rice, the UK does not apply a tariff to Indian wheat imports so there would be no room for liberalisation under an FTA. However, with potential shortages of wheat in Europe and increased prices for Canadian wheat[19], a new trade deal with India could still mean an increase in Indian wheat imports to the UK.

Table 2: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on wheat

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
Carbaryl	0.5	2	X 4	Carcinogen Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase Inhibitor
Carbofuran	0.01	0.3	X 30	Suspected Endocrine Disruptor
Chlopyrifos	0.01	0.5	X 50	Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase Inhibitor
Malathion	8	10	X 1.25	Carcinogen Suspected Endocrine Disruptor Cholinesterase Inhibitor
Paraquat	0.02	0.03	X 1.5	Acutely toxic Suspected Endocrine Disruptor

See the Annex for references to the data in this table

Health issues related to pesticides – an explainer

The report lists the health issues associated to specific pesticide active substances. It is important to note that if a substance is classified as a 'Carcinogen' (for example) it does not mean that exposure to it will definitely result in the development of cancer. The classification simply means that in tests for toxicity the substance can cause a particular effect.

Here is a guide to the specific health issue classifications listed in the report:

- **Carcinogens** are capable of causing different types of cancer, including Leukaemia and Non-Hodgkin's Lymphoma.
- **Endocrine disruptors (EDCs)** interfere with hormone systems and can cause birth defects, developmental disorders and reproductive problems such as infertility.
- **Developmental or reproductive toxins** have adverse effects on sexual function and fertility in both adults and children, and can reduce the number and functionality of sperm and cause miscarriages
- **Cholinesterase Inhibitors** reduce the ability of nerve cells to pass information to each other and can impair the respiratory system and cause confusion, headaches and weakness.
- **Acute toxicity** describes the adverse effects of an active substance that result either from a single exposure or from multiple exposures in a short period of time (usually under 24 hours). Effects of acute poisoning can range from itchy eyes and breathing difficulties to death.

Apple

India is the world's fifth largest producer of apples.[20] Since 2014, exports of Indian apples have grown by 82%, supplied mainly from the areas of Kashmir and Himachal Pradesh.[21] The Indian government is keen to see this trend continue and their apple export market increase.[22] The UK imports high volumes of apples from a variety of global destination, including India. If the UK cuts the current 6% 23 tariff on Indian apples (or even eliminates it entirely as it did for apples grown in Western Australia under the UK-Australia FTA[24]) then consumers could experience a rise in Indian apples on UK shelves. This would also threaten to undercut UK apple producers who are not permitted to use many of the pesticides deployed by Indian growers, because they have been banned in the UK to protect human health or the environment.

Table 3: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on apple

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
2,4-D	0.05	2	X 40	Carcinogen Suspected Endocrine Disruptor
Captan	10	15	X 1.5	Carcinogen
Carbendazim	0.2	5	X 25	Carcinogen Suspected Endocrine Disruptor
Carbofuran	0.001	0.1	X 100	Suspected Endocrine Disruptor
Chlorpyrifos	0.01	1	X 100	Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase Inhibitor
Malathion	0.02	4	X 200	Carcinogen Suspected Endocrine Disruptor Cholinesterase Inhibitor
Paraquat	0.02	0.05	X 2.5	Acutely toxic Suspected Endocrine Disruptor
Tebuconazole	0.3	1	X 3	Carcinogen Suspected Endocrine Disruptor
Thiacloprid	0.3	0.7	X 2	Carcinogen

See the Annex for references to the data in this table

Grapes

India is one of the top ten producers of grapes in the world.[25] Currently the UK imports approximately 7% of all grapes exported by India.[26] Following a drop-in production during the pandemic, production levels of Indian grapes are set to rebound and increase over the coming years.

Table grapes are one of the most problematic types of produce regularly being found with high levels of multiple pesticide residues. 2020 residue data for grapes available in the UK showed that almost 90% of samples tested had multiple pesticide residues present.[27]

Given how common high residues are in grapes, coupled with India's issues with MRL exceedances, any incentivisation of increased grape exports under a UK-India FTA must be accompanied by the enforcement of strict MRL levels including stringent and regular testing. The UK currently applies a tariff of 8% to fresh grapes and 2% to dried grapes imported from India.[28]

Table 4: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on grapes

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
2,4-D	0.1	2	X 20	Carcinogen Suspected Endocrine Disruptor
Captan	0.03	25	X 833	Carcinogen
Carbendazim	0.3	5	X 16	Carcinogen Suspected Endocrine Disruptor
Carbofuran	0.002	0.1	X 50	Suspected Endocrine Disruptor
Chlorpyrifos	0.01	0.5	X 50	Suspected Endocrine Disruptor Developmental or Reproductive Toxin Cholinesterase Inhibitor
Malathion	0.02	4	X 200	Carcinogen Suspected Endocrine Disruptor Cholinesterase Inhibitor
Paraquat	0.02	0.05	X 2.5	Acutely toxic Suspected Endocrine Disruptor
Tebuconazole	0.5	6	X 12	Carcinogen Suspected Endocrine Disruptor

See the Annex for references to the data in this table

Mangos

The UK market for Indian Alphonso mangoes currently stands at approximately £7 million per annum.[29] They are imported into the UK tariff-free. Increased demand in the UK coupled with a rise in production in India and closer trade links could see the quantity of Indian mangoes imported to the UK increase over the coming years.[30] Residues on mangoes are an issue, resulting both from pesticides used during production and fungicides designed to preserve them while being transported.

Table 5: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on mangos

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
2,4-D	0.05	2	X 40	• Carcinogen • Suspected Endocrine Disruptor
Captan	0.03	15	X 500	• Carcinogen
Carbendazim	0.5	5	X 10	• Carcinogen • Suspected Endocrine Disruptor
Carbofuran	0.01	0.1	X 10	• Suspected Endocrine Disruptor
Chlorpyrifos	0.01	0.5	X 50	• Suspected Endocrine Disruptor • Developmental or Reproductive Toxin • Cholinesterase Inhibitor
Malathion	0.02	4	X 200	• Carcinogen • Suspected Endocrine Disruptor • Cholinesterase Inhibitor
Paraquat	0.02	0.05	X 2.5	• Acutely toxic • Suspected Endocrine Disruptor
Tebuconazole	0.1	0.2	X 2	• Carcinogen • Suspected Endocrine Disruptor

See the Annex for references to the data in this table

Onions

In 2021 India produced 21 million metric tonnes of onions, an amount that has been steadily increasing since 2015.[31] The UK is the world's third largest importer of onions, behind the USA and Vietnam.[32] Given the prevalence of onions in both Indian production and UK diets, any cut in tariffs on agricultural products under a UK-India FTA is likely to lead to an increase in Indian exports of onions to the UK. The UK currently applies a tariff of 8% to Indian onions.[33] If the UK government agrees to promote Indian exports by removing this tariff then it must ensure that border controls are stringent enough to detect illegal pesticide residues.

Table 6: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on onions

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
Carbaryl	0.02	5	X 250	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin • Cholinesterase Inhibitor
Carbendazim	0.1	0.5	X 5	• Carcinogen • Suspected Endocrine Disruptor
Carbofuran	0.002	0.1	X 50	• Suspected Endocrine Disruptor
Mancozeb	1	4	X 4	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin
Malathion	0.02	3	X 150	• Carcinogen • Suspected Endocrine Disruptor • Cholinesterase Inhibitor
Paraquat	0.02	0.05	X 2.5	• Acutely toxic • Suspected Endocrine Disruptor
Pendimethalin	0.05	0.4	X 8	• Carcinogen • Suspected Endocrine Disruptor

See the Annex for references to the data in this table

Tea

The UK is the largest importer of tea in Europe and each year imports approximately 20,000 tonnes of tea from India, second only to Kenya.[34] Whilst there have been issues with residues being present in tea, there are significantly greater pesticide-related problems associated with production. Large quantities of pesticides, including organochlorines, organophosphates and pyrethroids, are used in the production of Indian tea.[35] These chemicals (many of which are banned in the UK) are having harmful impacts on tea plantation workers and the surrounding environment.[36]

It has been reported that exports of Indian tea have reduced in recent years and that the industry is calling for the Indian government to take action to help increase exports.[37]

The UK does not apply tariffs to imports of Indian tea.[38] Despite the lack of opportunities for liberalisation via tariff removal, a new FTA could still drive an increase in Indian tea imports by creating a more favourable trading environment which encourages Indian exporters to target the UK market. This could drive intensification of tea production and increase the harms to the health of plantation workers, local residents and the surrounding environment where the tea is grown.

Table 7: Examples of Maximum Residue Levels set for Highly Hazardous Pesticides used on tea

Pesticide (active substance)	UK MRL	India		Health issues (see guide on page 13)
	mg/kg	mg/kg	vs. UK	
Carbendazim	0.1	0.5	X 5	• Carcinogen • Suspected Endocrine Disruptor
Chlorpyrifos	0.01	2	X 200	• Suspected Endocrine Disruptor • Developmental or Reproductive Toxin • Cholinesterase Inhibitor
Mancozeb	0.1	3	X 30	• Carcinogen • Suspected Endocrine Disruptor • Developmental or Reproductive Toxin

See the Annex for references to the data in this table

UK could face pressure to approve or reapprove harmful pesticides

Despite approving fewer pesticides in general than the UK, India allows the use of 62% more HHPs (118 to the UK's 73). A closer look at organophosphates (OPs) – a group of pesticides known to be particularly toxic to humans – reveals that India approves 16 different pesticides, while the UK just four.

Many pesticides that have been banned in the UK due to the threat they pose to the environment and human health remain in use in India. The list includes the following HHPs:

Table 8: Examples of Highly Hazardous Pesticides approved for use in India but banned in UK

Pesticide (active substance)	Environmental harms	Human health harms
Atrazine (Herbicide)	• Persistent in water • Harmful to aquatic ecosystems	• Carcinogen • Developmental or Reproductive Toxin • Suspected Endocrine Disruptor
Imidacloprid (Insecticide)	• Highly toxic to bees	
Acephate (Insecticide)	• Highly toxic to bees	• Carcinogen • Cholinesterase Inhibitor • Suspected Endocrine Disruptor
Chlopyrifos (Insecticide)	• Highly toxic to bees	• Cholinesterase Inhibitor • Developmental or Reproductive Toxin • Suspected Endocrine Disruptor
Paraquat (Herbicide)	• Persistent in water and soil • Potential groundwater contaminant	• Acutely toxic • Suspected Endocrine Disruptor

See the Annex for references to the data in this table

As has been seen with other agricultural powerhouses such as the US, the UK's relatively precautionary approach to which active substances it decides to approve is likely to come under attack during negotiations with India. This is because pesticides which are not approved for use in the UK are not allowed to appear as residues above the limit of detection (0.01 mg per kg). Indian companies therefore potentially have much to gain from pressuring the UK to approve more HHPs, or even reapprove some that have been previously banned, enabling exports of food currently excluded from the UK market due to residues.

Credit Bryce Carithers / Pexels.com.

Vegetable market stall with a selection of produce. Credit JoannaTkaczuk / Shutterstock.com.

THREATS TO UK FARMING

The threats posed to UK agriculture by a UK-India FTA are twofold: reduced tariffs leading to competition with imports grown to standards that are either lower or illegal in the UK; and the undermining of UK efforts to both reduce environmental harm from domestic farming and to increase farm resilience.

The UK Landworkers Alliance[39] are campaigning for agriculture to be left out of the tariff liberalisation under the deal due to the likely damage to both UK and Indian farmers, smallholders, animals and the farmed environment as it will increase the intensity and therefore environmental impact of Indian farming and exports of vital crops relied upon by local populations. Indian producers, who have no welfare safety nets, may also face competition from UK imports.

The UK Government's own impact assessment has projected that there will be a fall of around £10m in domestic agricultural output if an Indian agreement is reached.[40] As India is the world's biggest milk producer, the second biggest vegetable, fruit and egg producer and the third biggest beef exporter on the globe, this is perhaps not surprising. The assessment sits in stark contrast to other sectors, such as manufacturing and motors, for which the assessment is far more positive.

For produce that can be grown in the UK (including wheat, onions, carrots, sugar and apples) a deal that incentivises or allows greater imports could harm UK producers operating under higher pesticide standards. As an example, Indian carrots are permitted to contain 500 times the amount of fungicide captan, a known carcinogen, than UK carrots. The UK urgently needs to build domestic, sustainable supplies of fruit and vegetables to deliver on its goal to increase healthy diets.[41] Yet farmers know their main buyers will seek cheaper imported produce and raw materials if available.

The Trade and Agriculture Commission recently reviewed the impact of the UK-Australia FTA on UK statutory protections. Pesticide-related harms from the FTA emerged as the single most concerning finding of the report, with the FTA driving imports of cheaper products that competitively undercut UK farmers. The Report concluded that:

The FTA has no effect on the UK's existing WTO rights to regulate the import of products produced using pesticides that are harmful to UK animals, plants, or the environment. However, the FTA is likely to lead to increased imports of products that have been produced at lower cost by using pesticides in Australia that would not be permitted in the UK.[42]

The TAC Report's finding is based on the fact that the UK, in some cases, permits residues of pesticides banned for use in the UK to appear in imported products. As a result, Indian farmers are able to use pesticides banned in the UK, giving them a competitive advantage over domestic producers. As the table below shows, this isn't only the case for produce such as tea and mangoes which cannot be grown in the UK, but also for crops such as apples and onions that are grown domestically, posing a direct threat to UK growers.

Goldfinch.
Credit Laszlo Fatrai / Pexels.com.

Table 9: Examples of Maximum Residue Levels on imported produce for pesticides banned for use in the UK

Produce	Pesticide (active substance)	UK status (Approved for use by British farmers?)	UK MRL for imports mg/kg
Onions	Carbaryl	Banned	0.02
	Carbendazim	Banned	0.1
	Paraquat	Banned	0.02
Apples	Bifenthrin	Banned	0.01
	Carbendazim	Banned	0.2
	Chlorpyrifos	Banned	0.01
	Paraquat	Banned	0.02
	Thiacloprid	Banned	0.3
Wheat	Carbaryl	Banned	0.5
	Carbofuran	Banned	0.01
	Chlopyrifos	Banned	0.01
	Paraquat	Banned	0.02

See the Annex for references to the data in this table

While this has already been identified by the TAC as an issue for Australia (and since time of writing the TAC has advised the government that this is also a problem with the UK-New Zealand FTA[43]) it would likely be a much greater problem for an FTA with India. As one of the world's largest agricultural producers (including fruit, vegetables and cereals), farming is hugely important to India's economy, employing around half of the population and making up 10% of its exports and 16% of the country's total GDP[44] (compared to 3% of GDP in Australia[45] and less than 0.6%[46] in the UK). The UK must address this potential competitive threat to UK farmers by not allowing food imports grown using pesticides banned for use domestically. Failing that, the UK should lower its MRL requirements for imported products to the limit of detection (which is usually set at the default value of 0.01 mg per kg) for pesticides that are not approved for use in the UK).

It's also vital that a UK-India FTA does not undermine recent progress by government and farmers to reduce UK pesticide harms. Any pressure via the deal to lower UK pesticide standards would damage the achievement of goals to reduce both pesticide use and the associated risks as set out in the 25 Year Environment Plan[47] and draft UK National Action Plan for the Sustainable Use of Pesticides[48]. Equally, uptake by farmers and consequently the impact of the Integrated Pesticide Management (IPM) standard – part of the new English Environmental Land Management Scheme (replacing European farm support schemes) and similar schemes in the other three nations – would be severely lowered if farmers find themselves having to compete with Indian imports produced more cheaply to lower standards. The income derived from such 'green farming schemes' will have to be significant to make the business case.

REASONS THE UK SHOULD BE ESPECIALLY CONCERNED ABOUT AN FTA WITH INDIA

The UK imposes its MRL requirements on products coming in to the UK, so theoretically India will not be able to export products that don't conform to UK domestic requirements. However, there are three potential reasons why this regulatory protection may come under threat from the FTA. First, gaps in the UK's border testing regime could allow products with illegally high residue levels to circulate in the UK (already a recognised problem) with greater frequency. Second, for some products, the UK allows higher residue levels for imported products than domestic products. This can competitively undercut UK farmers, a problem already noted in the recent Trade and Agriculture Commission's advice on the UK-Australia FTA[49]. Finally, India could successfully lobby the UK Government to change its permitted Maximum Residue Levels, and (if they are not drafted carefully) could use FTA legal and institutional provisions to help increase its leverage over UK regulation. We examine these issues in turn.

India's MRL exceedances and the UK's weak residue testing regime

India has a major, ongoing problem with its agricultural exports being rejected by importing countries due to pesticide residues that exceed legal limits. While this is already an issue confronting the UK, liberalisation of agricultural tariffs and the establishment of a more favourable trading environment through an FTA would be likely to increase Indian agri-food exports to the UK, and thus increase the frequency with which UK consumers ingested these foods.

The list of Indian produce rejected by importing countries due to non-compliance with MRLs includes mangos, chillies, spices and seafood. In June 2022, an argument erupted between Indian tea growers and buyers over increasingly frequent rejections of shipments due to illegally high pesticide residues. Several shipments of tea had been rejected not only by importing countries but also by domestic buyers for containing residues above India's domestic MRLs. While buyers called for farmers to take urgent action to reduce residues, producer organisations were lobbying for MRLs to be relaxed[50].

Basmati rice is the most problematic crop for Indian exporters. India is the largest global producer and exporter of basmati rice[51] and its sale provides an important income stream for many people in the areas where it is grown. However, the number of shipments being rejected by importing countries for failing to meet MRLs is increasing.[52] It has been reported that as much as 200 tonnes of basmati rice is rejected by importing countries every month due to MRL exceedances.[53] Initially this was mostly an issue with exports to the EU which had imposed strict MRLs on Indian rice. However, recently countries such as Egypt, Lebanon, Yemen and Jordan have had to reject Indian rice shipments.

Despite the significant issues around residues in rice, it is not included the short list of Indian products that the UK has flagged as being of particular concern and should therefore result in automatic testing for pesticide residues at the port of entry. In fact, this list is limited to just four types of produce which are arguably far less common than rice in UK diets, namely; curry leaves, okra, peppers and sesame seeds.[54] It is not only rice that is escaping additional scrutiny – significant Indian export crops such as wheat and all other fruit and vegetables than the four listed are also not subject to automatic testing.

There are significant questions about the UK testing regime for MRLs and whether it is extensive enough to detect shipments of food containing pesticide residues above the UK's legal limits, thereby protecting consumers from excess pesticide residues. Specifically:

- The UK tests a small fraction of produce that is imported or on sale to the public, only around three thousand 1kg samples of food per year[55]. While this testing is useful to an extent, it only provides a snapshot in time because it is inconsistent and piecemeal. For example, mangoes might be tested one year and not the next and only a tiny proportion of mangoes consumed in the UK are tested. Similarly, the limited amount of samples tested does not reflect the huge range of produce available to the UK public. In 2020, just six varieties of fruit and fifteen types of vegetable were tested[56].
- The Government argues that it's unnecessary to test more than 3,000 samples of food per year because the UK runs a risk-based system which focusses on the food most likely to pose a threat to consumer health. However, in 2021 (the most recent year for which official data is available), the Government failed to test three-quarters of the previous year's produce of concern.
- There currently appears to be almost no scrutiny of the UK's pesticide residue testing regime or its results. For example, PAN UK found some major errors in the 2021 published data which were not picked up by the Government nor any other public body. Figures for MRL exceedances were pasted into the column that was supposed to show incidences of multiple residues. The figures were published by the UK Government containing this obvious mistake without anyone noticing the duplication. Once PAN UK pointed out the mistake, the figures were corrected.
- Despite the significant border control challenges posed by EU exit, the UK pesticide residue testing regime does not appear to have experienced a significant rise in investment or staff capacity. As a result, outside of the EU, it is highly likely that the UK lacks the infrastructure and resources required to adequately test imported produce for pesticide residues.

A UK-India FTA which incentivises an increase in Indian food exports, therefore poses a considerable risk to UK consumer health. A huge agricultural powerhouse like India with significant and persistent residue issues, combined with a weak UK testing regime full of loopholes, makes it extremely likely that food containing illegal levels of pesticides will be able to slip through the net and make it on to UK shelves.

India's aggressive lobbying power and regular attempts to weaken international pesticide standards

Countries are increasingly applying stricter MRLs[57], which is having a major knock-on effect on Indian exports. India's residue problems persist despite its approach to pesticides being far more trade-oriented than that of the UK. Indian crops produced for export are theoretically grown in accordance with the requirements of the import destination country. So, for example, Indian mangos destined for the UK market are supposed to be grown in a way which keeps residues below the MRL set by the UK government. Despite India's top priority seemingly being the protection of its agricultural exports, its residue problems persist.

With the UK being an important destination market for Indian agri-food exports, it is likely that the Indian government will put pressure on the UK to weaken its MRLs to help increase the flow of trade. In fact, the Indian government has been known to act in this way previously. It has long pushed for the EU to relax its MRLs to help facilitate trade and remove what it views as a non-tariff barrier.

The Indian Government also has a track record of obstructing international efforts to improve global pesticide management, especially when they threaten sales and use of Highly Hazardous Pesticides produced by the country. The Indian pesticide industry is powerful, and has strong links to the government which has, in the past, gone as far as to appoint pesticide industry personnel to its official treaty delegations. The industry, for its part, has used this privileged access to aggressively lobby to protect its interests.

Given the ongoing negotiations, it is crucial that the UK Government is aware of India's long history of obstructing international efforts to regulate pesticides, particularly when they threaten trade. Below are a few examples which should raise red flags for UK trade negotiators who must be prepared to defend UK standards in the face of pressure from India.

In 2011, the toxic insecticide endosulfan was banned globally by the Stockholm Convention – an international treaty that aims to end the production and use of persistent organic pollutants. At the time, India was a major producer and exporter of endosulfan, and in spite of strong evidence of widespread poisoning of communities in cashew nut plantations in Kerala, the Indian government repeatedly blocked efforts to ban the chemical under the Convention. In the final round of negotiations, when India was increasingly isolated, its negotiators dropped their objections to the listing but managed to secure a range of exemptions for the continued use to protect its exports, along with a very long – up to 11 years – phase out period.[58]

In the event, India did not get to make use of these concessions. In the face of national inaction, a number of local State Governments had already taken steps to restrict the use of endosulfan in their areas and the government was facing legal action to force it to act. A few weeks after the Stockholm Convention decision, the Indian Supreme Court ordered an end to the production, use, sale and export of endosulfan.[59] However, by that point, India's actions had already significantly hindered global efforts to ban endosulfan.

India has also acted to hold up efforts to improve information sharing on dangerous pesticides where it sees this as a threat to trade. The 2004 Rotterdam Convention on Prior Informed Consent is a Multilateral Environmental Treaty that aims to improve information sharing about hazardous chemicals.[60] Importantly it requires countries exporting pesticides to inform importers if they impose any bans or restrictions on the chemicals they want to export. It is effectively a trade agreement in that it does not require countries to ban or phase out a chemical – just to share information on the hazardous properties and regulatory status when it is exported.

One useful element of the Rotterdam Convention is the facility for developing countries and economies in transition to identify pesticides that are causing harm to the environment or human health under real-life conditions of use. These so-called Severely Hazardous Pesticide Formulations (SHPFs) are listed by the Convention so all Parties are aware of the potential problems when they consider importing a pesticide. The process of listing involves a scientific review of the evidence by an expert committee before approval by all Parties to the Convention.

Importantly the vote must be unanimous, so one country can block listing, even if the experts have concluded that the pesticide has indeed caused severe problems.

India has repeatedly intervened in the chemical review and listing processes to delay or prevent the listing of pesticides, including SHPFs. Endosulfan was first recommended for listing by the Chemical Review Committee of the Rotterdam Convention in 2005[61] when a number of developing countries presented evidence that it was causing multiple fatalities in their areas. When the recommendation was considered by the Conference of the Parties in 2008, India was one of just three countries that blocked its listing.[62] It was to take another three years – and a ban by the Stockholm Convention – before India backed down and allowed it to be listed.

Since then, India has continued its obstructive actions speaking against the listing of pesticides, including some which have been linked with fatal poisonings such as carbosulfan[63] and carbofuran[64]. One of the most notorious examples is the case of paraquat which is estimated to have killed tens of thousands of people worldwide. The Chemical Review Committee proposed its listing in 2013, but it has been repeatedly voted down by a just handful of Parties – including India[65] – and remains blocked. In 2017, just four out of the nearly 160 Parties – Chile, Guatemala, India and Indonesia – voted against the listing.[66] It was considered once more in June 2002 and, again, blocked by India which also again blocked the listing of carbosulfan, and chyrostile asbestos.[67] It is worth also noting that India's objections to listing pesticides are not relevant to the Convention, and so it either misunderstands the nature of the treaty or is seeking to subvert it, which should raise alarm bells for any sort of trade negotiations. This obstructive behaviour has caused a crisis in the Convention and there are now proposals to reform the Convention's listing requirements to allow voting so that a handful of Parties, such as India, cannot block its work and undermine the wishes of all other signatory countries.

Like the US, the Indian Government is notorious for pushing back strongly against any tightening of international pesticide rules. It has also reportedly challenged the EU's comparatively strict MRLs a number of times at the WTO as well as bilaterally. It is highly unlikely that the UK is not being put under similar pressure during trade negotiations.

Risk of a UK-India FTA undermining positive moves in Indian agriculture

India has experienced a boom in organic farming over recent years. Between 2017 and 2019, organic exports from India grew by 50% and this level of growth is expected to continue.[85] Domestic consumption of organic produce has also increased at a rate of approximately 13% year on year, and this is also predicted to continue for the foreseeable future.[86]

There are a range of drivers behind this rise in organic including the introduction of initiatives by some Indian State governments and consumer demand, both domestic and from the export market. In addition, high levels of poisonings and environmental harms caused by pesticides are leading increasing numbers of farmers to want to move away from their use of pesticides.

India has the greatest number of organic producers anywhere in the world, approximately 1,366,226,[87] but lags behind many other countries in the percentage of land under organic production which currently stands at approximately 2% of the cropped area.[88] However, as mentioned above, there are some excellent examples of individual Indian States taking measures to increase the area under organic cultivation.

The small Himalayan State of Sikkim is the first region in the world to go completely organic. It started on the road to organic in 2003 when it adopted a plan to phase out the use of pesticides and artificial fertilisers in an attempt to protect its biodiversity and the health and wellbeing of its citizens.[89] Due to its geography, only 10% of the land area of Sikkim is farmed. It was never geared up for intensive agriculture and so escaped much of the increase in the use of agrochemicals ushered in across most of India by the 1950s so-called 'green' revolution. Nonetheless, going organic has had benefits for farmers and citizens across the state. Farmers' incomes have improved, access to healthier food has increased and being the first organic region in the world has increased both domestic and international tourism.[90] The Government of Sikkim set out a plan, supported farmers with education and training and is feeding the benefits back to the wider community for the benefit of all. It is a shining example of what can be achieved if the political support is present and a vision is seen through to its conclusion.

But Sikkim is not the only example from India of the push for organic, sustainable agriculture. The State of Andhra Pradesh started a large-scale conversion to organic in 2000. Fed up of the harmful effects of pesticides which included poisoning, debt and increased pest and disease problems due to resistance, 900 farmers in Punukula village started experimenting with non-pesticide management techniques.[91] With the help of local organisations, organic and Integrated Pest Management techniques (such as using non-synthetic deterrents like neem and chilli and planting trap crops to deter pests) were developed and adopted. Within a year, local communities had started to see real and varied changes including improved health, higher incomes and increased employment opportunities making non-chemical alternatives to pesticides. As news of this successful change spread, interest grew and more villages and farmers made the switch away from pesticide use. Between 2004 and 2010, pesticide use in Andhra Pradesh decreased by 50%. Seeing the benefits of this kind of approach for citizens and the environment, the government of Andhra Pradesh has initiated a plan to make the entire state 100% "zero budget natural farming" by 2027.[92]

If designed and implemented properly then a trade deal between the UK and India could help support organic initiatives in India while also benefitting UK consumers by increasing their access to healthy and sustainably produced food. Conversely, if UK negotiators agree to drop their MRLs, or even maintain UK pesticide import tolerances and patchy border enforcement, thereby incentivising harmful, pesticide-dependant farming in India, then this could contribute to undermining the excellent progress already made to make Indian farming more sustainable. Non-organic Indian producers could see the UK as a useful outlet for their produce, particularly if their domestic markets are demanding ever more organic. Maintaining strong MRL requirements and actively seeking to increase imports of Indian organic produce should be a key element of any agreement on trade between India and the UK.

PESTICIDES IN INDIA

In addition to threatening to undermine UK pesticide standards, a UK-India FTA also risks driving pesticide-related harms on the ground in India where the food is grown.

While the UK government argues that MRLs prevent the worst impacts of pesticides, MRLs do not protect against harms where food crops are grown. This is because it is perfectly possible to use highly hazardous pesticides (for example, the lethal herbicide paraquat), without the chemicals in question turning up as residues in the final product. Farming and food processing practices can reduce, and even eliminate, residues while doing nothing to prevent the environmental or health impacts where the food is grown. Relying on MRLs to prevent UK diets driving pesticide-related harms in India is therefore woefully inadequate.

As described below, India already suffers from high levels of human health problems caused by pesticides. A UK-India FTA which incentivise an increase in agricultural exports is likely to contribute to further increases in these health issues.

Pesticide-related harms

Unintentional pesticide poisoning

India has a dramatic history of pesticides causing harm to human health and one of the highest rates of unintentional pesticide poisoning in the world – a fact which should be understood by UK trade negotiators.

It is reported that roughly 30,000 people die from pesticide poisoning every year in India.[68] Given that many Indian farmers cannot access PPE, accidental pesticide poisonings are a regular occurrence causing roughly 7,000 deaths per year.[69] In just one example from 2017, 50 farmers died and a further 800 were hospitalised from suspected pesticide poisoning in a major cotton growing area in the State of Maharashtra.[70]

While it is clear that agricultural workers are at the greatest risk from pesticide poisoning, concerns are being raised about the impact of HHPs on the children of India. There are approximately 548 million children under 18 in India, the highest child population in the world. It is estimated that 73% of the child population live in rural areas and are therefore at risk from exposure to pesticides. It is also estimated that some 7 million children in India are involved in agriculture. Accurate information on child pesticide poisonings and fatalities is not available but information for 2017 claimed that "injury, poisoning and certain other externalities" was the leading cause of death for Indian children aged 15-24.[71]

Beyond these fatalities there are also many instances of pesticides causing other health problems. The well-documented cases of children born with birth defects in the cashew growing area of Kerala is just one example. It eventually helped initiate a global phase-out of the insecticide endosulfan.[72]

Given the high rates of illiteracy among rural communities in India, lack of access to personal protective equipment (PPE) and training in safe pesticide use and easy access to HHPs it is not a surprise that poisoning rates remain high. Several measures could be introduced to try and reduce the prevalence of poisoning, the quickest would be for India to phase out the use of HHPs as a matter of urgency. Whilst no pesticide can be classed as completely safe, the older more hazardous pesticides that many Indian farmers use on a day-to-day basis often present a much greater risk to their health and the health and safety of their children. The continued use of chlorpyrifos and malathion, both of which are banned for use in the UK are good examples of this.

In April 2022, the Indian Government reportedly approved 477 pesticides – including insecticides and fungicides – for being sprayed by drones, with the aim of achieving their vision of 'one village, one drone'.[73] While drones can reduce the amount of human contact farmers have with pesticides, they can also greatly increase the risk of pesticides drifting and poisoning surrounding villages and wildlife. The UK does allow aerial spraying by drones but it requires specific approval which is only granted in a very limited set of situations and tends not to happen at all during dry years.

If the UK agrees to reduce tariffs on Indian agricultural produce, therby driving an increase in exports, then its crucial to pressure the Indian government to address its overreliance on HHPs in its agricultural system. Otherwise, UK consumers will potentially be benefitting from the suffering of India's rural communities.

Farmer debt and suicide

India also suffers from high rates of farmers committing suicide by swallowing pesticides. Pesticides are, in many cases, both the means and the cause of such suicides as farmers buy agrochemicals on credit but find that yields are too meagre to pay off these costs. In fact, studies have found that poisoning, mostly from pesticides (chiefly organophosphates and paraquat) used in agriculture, is the leading method of suicide among both Indian men and women.[74] In 2019, it was reported that as many as 10,000 people involved in India's farming sector resorted to suicide.[75]

As outlined above, one of the main driving factors for this high level of suicides is rural debt. In the 1960s India initiated a 'green' revolution with the express purpose of increasing agricultural productivity, in the first place to ensure domestic food security and, in more recent times, to allow for the development of the lucrative agricultural export market.[76] Increasing yield was key to the success of the 'green' revolution and, as such, High Yielding Varieties Seeds (HYV) were favoured and helped to increase the output of India's agriculture sector significantly. However, HYV tend to require substantial amounts of additional inputs, in particular pesticides, fertilisers and improved irrigation systems. These additional needs placed an often-unmanageable cost burden on growers, felt most acutely by smallholder farmers whose profit margins are already minimal.

Similar issues persist in Indian agricultural today. Many smallholder farmers are forced to borrow money from non-institutional money lenders who charge exorbitant rates of interest on loans taken out to pay for pesticides, fertilizers and other agricultural inputs. When the crops thrive farmers can make repayments. However, when a farmer loses a crop due to poor weather or other factors outside of their control they are no longer able to make repayments and can enter a crippling spiral of debt.[77] Suicide is all too often seen as the only way out. The accessibility of Highly Hazardous Pesticides (HHPs), which (unlike in the UK) are often widely available to buy in rural areas as well as being stored in the family home by many smallholder farmers, makes them the suicide weapon of choice. It also means that that suicide attempts are more likely to be fatal in countries such as India where larger numbers of HHPs remain in use.[78]

Legislative framework

Despite its status as the world's second highest user of pesticides after China, India's pesticide regulatory system is deemed unfit for purpose by many observers as it is based on a Bill introduced in 1968. It has been described as opaque and out of date and that it fails to address the challenges associated with pesticide use in the 21st century.[79] A new Regulation has been proposed, the 2020 Pesticide Management Bill, however this has still not been adopted.[80] Despite its stated objective of trying to bring Indian pesticide regulation into line with other more precautionary countries there are serious shortcomings in the proposed bill. In a commentary by the Pesticide Action Network India it was pointed out that without significant amendment the Bill, if adopted, would fail "to address post registration risk reduction and mitigation, protection of pesticide users, community and environment. Therefore, the Bill could have poor implications on protecting public health and environment".[81] Conversely the pesticide industry and other vested interests are concerned that the bill goes too far and would undermine the productivity and profitability of the Indian pesticide industry. Opponents of the bill also claim that it will have a negative impact on farmer livelihoods and productivity.[82]

Arguably the most fundamental difference between the way UK and India regulate pesticides is that the UK takes an approach based on the view that some pesticides are intrinsically hazardous and therefore simply too dangerous to be in use (the so-called 'hazard-based approach). In contrast, India follows a 'risk-based approach' based on a belief that almost all risks associated to pesticide use can be effectively managed. This is despite the country suffering from weak governance and enforcement, high poverty levels and low literacy rates which mean that many Indian farmers are unable to read the label on a pesticide product to ensure they are using it properly, let alone access the required Personal Protective Equipment. This can often result in problems of high residues in Indian agricultural produce since misuse of pesticides is common.

Sugar - the potentially bittersweet implications of a UK-India trade deal

India is the world's second largest producer of sugar after Brazil.[93] While the country produces approximately 35 million tonnes per year it consumes 25 million tonnes domestically, leaving a surplus of 10 million tonnes that is currently exported.[94] Due to the rising value of sugar and falling production in other key exporting countries such as Brazil, there have been recent calls to increase Indian sugar exports.[95]

The majority of Indian sugar is produced from sugar cane which tends to be grown on an industrial-scale using large quantities of pesticides. According to the National Sugar Institute of Kanpur, India, there are 21 key pesticide active substances used to grow Indian sugar cane.[96] Of these, 15 are classified as Highly Hazardous Pesticides (HHPs)[97]. All but two of these 15 HHPs are not allowed to be used by farmers in the UK due to the risk they pose to human health or the environment.[98]

Growing sugar cane is highly water-intensive, often resulting in the over extraction of groundwater sources thereby reducing water availability for both wildlife and human populations.[99] India already suffers a severe water deficit.[100] As an example, the drought prone State of Maharashtra, has increased its area of sugar cane cultivation from 167,000 ha in the 1970s to over a million ha today.[101] This growth in sugar cane cultivation is occurring across India, much of it in drought prone states.[102]

The sugar cane industry is also ranked in the top 20 most polluting industries in India, largely because after water is used in the growing and processing of sugar cane it is then discharged back into the environment.[103] In the state of Uttar Pradesh, for example, sugar cane processing accounts for approximately 32% of total wastewater discharges. Since 2014, there have been 23 court cases brought against the sugar industry for polluting the river Ganges, some which have resulted in large fines for the companies involved.[104]

As a way to ameliorate the harmful environmental impact of sugar cane production, it has been proposed that Indian farmers switch to growing sugar beet. Due to the climate, UK sugar farmers only grow beet and there is no cane grown in the UK. While sugar beet has its own issues, it uses less than a third of the water of sugar cane and has a shorter growing cycle of only four months, compared to over a year for sugar cane.[105] In addition, waste material from processing sugar beet can be used as feed for livestock which can help increase farmer incomes. A number of Indian states have expressed a desire to increase sugar beet production over the coming years as an effective way of improving farmer livelihoods and reducing the environmental impact of sugar production.[106]

The UK has a tariff-free quota for Indian sugar. In theory, once the quota has been filled then the UK should apply significant tariffs on any additional Indian sugar imports.[107] However, trade data appears to show that despite the UK importing 1,096,799 kgs of Indian sugar between October 2021 and April 2022, India did not use any of its tariff-free quota during this same time period.[108]

Despite this confusing picture, there is a chance that a UK-India FTA could focus the attention of Indian sugar exporters on the UK market. As the problems outlined above illustrate, any increase in Indian sugar cane production driven by UK demand would be likely to exacerbate pesticide-related harms to the environment in India where the sugar is grown.

In addition, any increase in Indian sugar exports to the UK is likely to undermine the ability of the UK sugar sector to remain profitable. Indian sugar farmers are able to use pesticides banned in the UK due to concerns over their impact on human health or the environment, putting them at a competitive advantage over their UK counterparts. As has been seen by the recent derogation for neonicotinoids on sugar beet granted by the UK Government in 2022, there is a clear risk that the UK could see the reversal of bans on the use of harmful pesticides in order to help domestic growers remain competitive.

The UK does not need an increase in the availability of cheap sugar, whether it is imported or domestically produced. The government has long acknowledged the significant harms that sugar is driving among the UK population, most notably the obesity crisis and the associated pressures it puts on the National Health Service.[109]

It is therefore vital that the UK Government, rather than liberalise sugar through FTAs like this, should be implementing a new and ambitious sugar reduction strategy. This is especially crucial given the increase in obesity prevalence amongst primary school children, and the urgency of addressing rising health disparities which have been exacerbated during the Covid-19 pandemic. This may require transition support for farmers to move into other cropping.

Despite India's reliance on the 'risk-based approach', its risk assessment for pesticides, only considers the harmful impacts on plants and animals, ignoring adverse human health effects and water contamination. In contrast to the UK, India has no mechanism for post-approval review of pesticides meaning that some pesticides authorised in the 1970s are still in use, regardless of any new information relating to negative health or environmental impacts. The use of counterfeit or illegal pesticides is a major issue in India accounting for approximately 30% of pesticides used.[83] Their use can pose an even greater risk to human and environmental health than the use of legal pesticides.

In 2020 the Government of India issued a notice stating its intention to ban 27 pesticides that have already been banned in other countries due to their risk of harm to human health or the environment.[84] Whilst this is a welcome initiative by the Indian authorities to try and address some of the problems associated with pesticide use it is insufficient to tackle the scale of pesticide-related harms. The 27 pesticide in question were chosen following a review of 66 pesticides that are banned for health and environment reasons in many other countries.

Credit Jack Sparrow / Pexels.com.

NEGOTIATING A UK-INDIA FTA: HOW TO PREVENT HARMS FROM PESTICIDES

Not liberalising agricultural products where there is evidence of pesticide-related harms

The UK already imports agri-food products from India, but the purpose of an FTA is to facilitate and increase trade, including through eliminating border charges. For agriculture, these border charges often take the form of Tariff-Rate Quotas (TRQs), which specify particular volumes of a product that can come in at low or no tariff (the quota) after which high charges apply (the tariff).

FTA negotiators are required to remove tariffs and TRQs across 'substantially all' trade, normally understood as being around 80-90%,[110] but agricultural products are considered particularly sensitive for various reasons, and TRQs are often excluded, or not fully liberalised to the point where there are no charges at all.

If the UK wishes to prevent increases in the risk of food coming in that is produced with illegally high MRLs (due to failure of border testing and enforcement) or made with pesticides illegal in the UK (either due to those pesticides not appearing as residues or the granting of higher import tolerances than are allowed domestically), the most straightforward way to do that is simply not to liberalise agri-food products. Failing this, the Government should avoid liberalising products that are particularly known for exceeding MRLs. A full analysis of the relevant products and TRQs is beyond the scope of this Report, but it suggests that this list should, at the very minimum, include (but not be limited to) the following products: apples, onions, grapes (fresh and dried), chillies, spices, curry leaves, okra, peppers and sesame seeds (the final four already flagged by the UK Government as being of concern)

The UK should also be cautious about liberalising agricultural products for which there is a strong link of pesticide-related harms to human health in India. Whilst it can be argued that MRLs do offer some level of protection for the UK consumer, they are in no way a safeguard against harms caused by the use of Highly Hazardous Pesticides on the ground where the food is grown.

If the Government does agree to liberalise trade in certain Indian agri-food products, it must ensure that border controls for MRLs are increased, including by putting them on the list of 'Foodstuffs with GB import restrictions'[111], if they are not there already.

Negotiate FTA provisions that reinforce the UK's right to regulate for environmental and health objectives

Indian exports would benefit if the UK relaxed its MRLs, and may subject the UK to pressure to do so. In order to reduce the channels through which India can apply pressure on the UK to do so via the FTA, UK negotiators must communicate clearly to their Indian counterparts that they have no intention of lowering their pesticide standards. This verbal commitment can also be translated into specific FTA provisions (and also the avoidance of some types of FTA language – see below for examples). More specifically, the UK should ensure that the FTA preserves its right to regulate, including on a precautionary basis, and also that it doesn't subject itself to obligations that make it more difficult for the UK to uphold its regulation.

Language to include

The UK should include the precautionary approach as a cross-cutting commitment in Trade and Environment chapters, ie:

- 'the Parties acknowledge that, where there are potential threats of serious or irreversible damage to the environment or human health, the lack of full scientific certainty shall not be used as a reason for preventing a Party from adopting appropriate measures to prevent such damage.

The UK should include the precautionary approach in the SPS chapter. This could be included in the 'Objectives' section of the chapter, ie:

- 'allow Parties to adopt or maintain sanitary and phytosanitary measures necessary for the protection of human, animal, or plant life or health, including on a provisional basis if relevant scientific evidence is insufficient.

Language to avoid

Because they have been understood as lessening countries' ability to rely on the precautionary approach,[112] **the UK should avoid** commitments furthering science-based risk assessment. An example of such language can be found in the United States-Mexico-Canada Agreement (USMCA) objective:

- encourage the development and adoption of science-based international standards, guidelines, and recommendations, and promote their implementation by the Parties.

The UK should also avoid obligations to explain the rationale for departing from international standards. Again, an example of the type of language to avoid is found in the USMCA objective:

- If a Party has reason to believe that a specific sanitary or phytosanitary measure adopted or maintained by another Party is constraining, or has the potential to constrain, its exports and the measure is not based on a relevant international standard, guideline, or recommendation, or a relevant standard, guideline, or recommendation does not exist, the Party adopting or maintaining the measure shall provide an explanation of the reasons and pertinent relevant information regarding the measure upon request by the other Party.

The UK should avoid provisions that go beyond WTO obligations to consider the 'equivalence' of each other's' regulation. These include, for example, procedural obligations set down in the Comprehensive and Progressive Agreement for Tarn-Pacific Partnership (CPTPP) Article 7.8(2) which obligate Parties, upon request, to explain the objective and rationale of their regulations.

Finally, in keeping with its approach in the recently-signed UK-Australia and UK-New Zealand FTAs, the UK should ensure that the dispute settlement procedure does not apply to its Sanitary and Phytosanitary Standards chapter of the FTA, which covers pesticide regulation. This will prevent India from challenging UK food safety regulation in a way that could lead to arbitration, and eventual sanctions, against the UK.

Credit Viktoria Emilia / Pexels.com.

FULL RECOMMENDATIONS TO THE UK GOVERNMENT

- Do not allow any weakening of UK pesticide standards via a UK-India FTA. This must include:
  - » Ensuring that no currently banned pesticides are allowed for use in the UK
  - » Ensure that food containing detectable residues of currently banned substances cannot be imported into the UK
  - » Ensure that Maximum Residue Levels are maintained or reduced.
- Be clear throughout all stages of negotiations that the UK does not intend to lower its pesticide standards.

Ensure sufficient scrutiny

- The UK Government and the TAC should undertake and publish detailed assessments on the likely impacts of a UK-India FTA on pesticide use in both countries and the associated public health and environmental impacts.
- The UK should ensure that trade agreements are developed in the open with the opportunity for full democratic scrutiny. This should include a meaningful role for MPs, Peers and the devolved administrations.

Resist calls to liberalise Indian agri-food imports

- Prevent UK farmers from being disadvantaged by cheap food imports produced to weaker pesticide standards in India. In particular, the UK must address the potential competitive threat to UK farmers by not allowing food imports grown using pesticides banned for use domestically. Failing that the UK should lower its MRL requirements for imported products to the limit of detection (which is usually set at the default value of 0.01 mg per kg) for all pesticides that are not approved for use in the UK.
- The UK should not liberalise (phase out Tariff Rate Quotas) for Indian products that have a proven track record of violating MRL legal requirements or driving pesticide-related harms to human health or the environment in India. In particular:
  - » The list of products should include (but not be limited to): apples, grapes (fresh and dried), chillies, spices, curry leaves, okra, peppers and sesame seeds.
  - » Foods commonly grown with highly hazardous pesticides classified as carcinogens, suspected endocrine disruptors (EDCs), developmental or reproductive toxins, neurotoxins, cholinesterase inhibitors and/or acutely toxic.

Strengthen border controls

- The UK should ensure that its borders are adequately resourced to ensure that products with illegal levels of pesticide residue aren't circulating in the UK.
- If the UK Government does agree to liberalise trade in Indian agri-food products associated with pesticide-related harms and MRL exceedances, it must ensure that border controls for MRLs are increased, including by putting them on the list of 'Foodstuffs with GB import restrictions', if they are not there already.

Maintain ability to introduce future regulations on pesticides

- The UK should ensure that the obligations it negotiates in the FTA protect its right to regulate pesticides. A full list of suggested provisions can be found in page 31.
- The UK Government should reject clauses in a UK-India FTA which create additional obligations to justify taking a less stringent approach to protecting human health and the environment from pesticides.
- Ensure that a UK-India FTA explicitly affirms the ability of both Parties to invoke the precautionary principle.
- The UK should exempt its SPS (food safety) FTA chapter from dispute settlement, as it has done in its recent FTAs with Australia and New Zealand.
- The UK Government should resist all attempts by India to push the UK to revert to weak Codex Alimentarius standards on pesticide residues.

Support positive moves in Indian agriculture

- Building on its recognition of India's organic standards as equivalent to those in the UK,[113] the UK Government should actively seek to facilitate and encourage imports of Indian organic produce as a key element of any agreement on trade between India and the UK.

Cutting sugarcane, Madhya Pradesh, India. Credit: Parikh Mahendra / Shutterstock.com.

ANNEX: LIST OF DATA SOURCES

The data underpinning the key findings contained in this report have come from a variety of sources which are listed below. The authors have used these data sources as the foundation for conducting additional, in-depth analysis in order to arrive at the report's key findings.

Country-specific data

UK

All data taken from the UK Government's Chemical Regulation Directorate databases:

- Pesticide product approvals - **https://secure.pesticides.gov.uk/pestreg/ProdSearch.asp**
- Pesticide active substances approvals - **https://www.hse.gov.uk/pesticides/pesticides-registration/uk-active-substances-register.htm**
- Maximum Residue Levels - UK - **https://secure.pesticides.gov.uk/MRLs/Main**

India

- Pesticide product approvals - **http://ppqs.gov.in/divisions/cib-rc/registered-products**
- Pesticide active substance approvals - Insecticides / Pesticides Registered under section 9(3) of the Insecticides Act, 1968 for use in the Country - **http://ppqs.gov.in/insecticides-pesticides-registered-under-section-93-insecticides-act-1968-use-country-01042022**
- Maximum Residue Levels – India - **http://www.indiaenvironmentportal.org.in/files/file/Gazette_Notification_MRL_Pesticides.pdf**

International standards

- Codex Alimentarius Maximum Residue Levels (MRLs) - **http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/commodities/en/**

Highly Hazardous Pesticides (HHPs)

- PAN International List of Highly hazardous Pesticides (March 2021) **-** **http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf**
- PAN International Consolidated List of Banned Pesticides (March 2021) - **http://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/**

Human health and environmental issues/classifications

- Pesticide Info database (managed by PAN North America) - **https://www.pesticideinfo.org/search-chemicals-or-products**
- PAN International List of Highly hazardous Pesticides (March 2021) **-** **http://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf**

Farmer spraying pesticides in a paddy field, directly affecting water courses. South India. Credit Gnanistock / Shutterstock.com.

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TOXIC TRADE

How a trade deal with India threatens UK pesticide standards and farming

A report by PAN UK, Sustain and Dr Emily Lydgate

Pesticide Action Network UK

PAN UK is the only UK charity focused solely on tackling pesticdes and promoting safe and sustainable alternatives in agriculture, urban areas, homes and gardens. We work tirelessly to apply pressure to governments, regulators, policy makers, industry and retailers to reduce the impacts of harmful pesticides to both human health and the environment.

Our work includes campaigning for change in policy and practices at home and overseas, co-ordinating projects which help smallholder farming communities escape ill-health and poverty caused by pesticides, and contributing our wealth of scientific and technical expertise to the work of other organisations who share our aims.
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Sustain

Sustain: The alliance for better food and farming, advocates food and agriculture policies and practices that enhance the health and welfare of people and animals, improve the living and working environment, enrich society and culture, and promote equity.

It represents around 100 national public interest organisations working at international, national, regional and local level.
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