The Environmental Footprint of UK Trade: Three Case Studies and Recommendations

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Funding for the paper was received through the ESRC-FCDO Development Frontiers Grant Program [ES/T016051/1] and the British Academy Postdoctoral Fellowship Scheme [pf170152]

February 2022

The Environmental Footprint of UK Trade

1. Neither climate change, nor its impacts are domestic issues, yet we continue to view both through a national lens. The vast network of processes and interconnections that make up the global economy not only underpin and distribute the production of carbon, but shape its impacts also, distributing processes of production – and the environmental impacts that go with them – to places far from where those goods are ultimately used. The goal of this brief is to exemplify the complexity of the processes that shape environmental change – and in doing so, to highlight the shortcomings of the national accounting mechanisms used to measure it – but also to raise the question of responsibility. How environmental degradation is measured and how its costs are attributed and managed are two elements within the same equation. In pursuit of a new approach, each of the below recommendations highlights distinct dimensions of this issue with reference to specific case studies.

Case study 1: Brick imports from South Asia to the UK

2. The first case examined here concerns the rapidly growing phenomenon of brick importation from outside the UK. Once self-sufficient in terms of brick production, the UK has since the recession of 2008 seen production fall behind demand. As a result, the UK has now risen to become the world's largest importer of bricks, importing more than 400,000 in 2019 (HMRC, 2020). Moreover, these bricks are coming from further and further afield. Bricks imported from outside the EU increased more than tenfold in the five years between 2015 and 2019, from 3,088,902 to 32,942,280: a low value, high weight trade that generates carbon on an enormous scale. Produced in largely unregulated kilns and shipped thousands of miles by boat, a three-kilogram house brick imported from outside the EU has a carbon cost three times higher than one produced domestically. Worse still, they carry with them a legacy of local environmental destruction and human exploitation on a scale that the UK has long since eliminated domestically, yet on which the goods we consume continue to depend.

Case study 2: Garment Imports from Cambodia to the UK

3. In the second case, that of Cambodia, the aim is to highlight the role of the country within a wider process of trade and environmental destruction. A garment labelled "Made in Cambodia" tells only a small part of a far larger, global story. Cambodia has no cotton fields and neither produces, nor processes the raw materials which comprise its clothes. Rather, these materials have come in many cases from as far away as the United States, Ivory Coast or Brazil. The vast majority, 84%, of cotton exports from Cambodia to the UK come directly or indirectly from China: a country whose status as 'the world's factory' (Mees, 2016) has come at a heavy environmental cost (Albert and Xu, 2016). With China now committed to net zero in the next four decades, many high emission and environmentally damaging production processes are being moved to countries with a net carbon budget remaining, such as Cambodia. To meet the energy demand for this expanded production, Cambodia is investing heavily in coal power, increasing grid intensity from a planned 5.2 tons C02/ ton garments under its previous energy plan, to 8.3 tons of C02/ ton garments under the new plan. This will result in an increase in the UK's imported emissions of the equivalent of burning 70,000 tons of coal each year.

Case Study 3: Tea Imports from Sri Lanka to the UK

4. The third part of this study explores the production of Ceylon tea in Sri Lanka's central highlands. Long a central pillar of the Sri Lankan economy, the tea trade has suffered in recent years, as the impacts of climate change increase costs and reduce yields. Tea plantations have begun to decline and become more risky to work in due to intense, climate change-linked rainfall. From 1990 to 2001, an average of 587 Sri Lankans were affected by landslides each year. From 2002 to 2019, this annual figure rose to 15,400: a 26-fold increase. Tea plantations play a key role in increasing this risk, being linked to over 60% of landslides according to studies elsewhere. In Sri Lanka, British tea plantations are located in areas of extremely high landslide risk, with 44% located in areas of high landslide risk and 3.4% located in areas facing the highest level of landslide risk.

The Problem: Environmental impacts in a Dynamic, Complex and International Economy

5. Although each of these cases focuses upon a distinct commodity and geographical area, they demonstrate in combination how the environmental regulations that appear in a domestic sense to resolve issues of environmental degradation frequently induce the mobility of environmental impacts across borders and beyond the reach of predominantly nationally focused regulations. Carbon emissions are then hidden by the complexity of the supply chains within which they are emitted. With international transport emissions, in particular, tending to fall outside of the purview of regulation, the result is a substantial source of carbon emissions hidden amidst the movement of international trade.
6. Moreover, an additional element is the intensification of climate-linked hazards in British supply chains. As rising atmospheric carbon concentrations increase the risk of extreme weather and natural hazards, processes of international trade shape, direct and intensify its impacts. Indeed, as is increasingly recognised, the impacts of disasters is articulated by the socioeconomic circumstances within which they manifest (Natarajan and Parsons, 2021; Kelman, 2020; Mora, 2009). Carbon emissions may therefore increase the likelihood of a given hazard – floods, or heavy rain, for example – but whether that hazard becomes a *disaster* in which lives are lost or displaced, and homes and livelihoods destroyed, depends upon the conditions it finds. Thus, it is these elements *in combination* that constitutes the full disaster footprint of international trade. For example:
    a. In the "brick belt" of Bangladesh and India, excavated paddy fields in the vicinity of sand dredged rivers, shaped by bricks produced for UK consumers, become focal points of vulnerability to flooding, whilst pollution and environmental degradation render adaptation more challenging for those affected.
    b. In the Cambodian garment industry, goods made for British consumers are linked to large scale deforestation in order to provide fuel for ironing processes, leading to local environmental degradation, and intensifying rainfall change and flooding
    c. In the Sri Lankan highlands, similarly, heavy rains linked to climate change present a far greater risk to those lands reformed for tea production than others around them, thereby directing and channelling the risk of landslides towards those tasked with producing the beverage for British consumers.

7. Tackling these intensified risks in British supply chains requires, overarchingly, a shift in emphasis across multiple sectors of governance and corporate practice, yet before this may be achieved it requires a renovation of the manner in which environmental impacts and policies are conceptualised, in order to connect the dislocated policy spheres of adaptation, mitigation and corporate governance.

Recommendation 1: Accounting for Emissions

8. The ongoing dominance of domestic carbon emissions accounting presents a key issue for climate governance. Nevertheless, although advocated against on a number of fronts in recent years (WWF, 2020a; Moran et al., 2018; House of Commons Energy and Climate Change Committee, 2012), it remains a difficult point to address both because national responsibility for environmental impacts is enshrined in all major environmental treaties, from Paris to Kyoto (Nielsen et al., 2020), but also because it tends to portray major global economies in a positive light, lending it support amongst influential political actors. The UK's success in reducing domestic carbon emissions by 44% since 1990 is a key case in point. Viewed in terms of what is consumed – rather than produced – within UK borders, carbon emissions have declined by at most 15% (WWF, 2020a). Yet without a clear motivation to transition to a footprint approach (Peters et al., 2011), the uptake of consumption-based and embodied emissions accounting remains limited.
9. Despite this problem of incentive, it is a key priority that carbon accounting transitions to supply chain-led model of emissions regulation. This is because as things stand, legal environmental standards effectively apply only to domestically produced products, whilst imported and supply chain emissions are subject to voluntary corporate standards (HM Government Environmental Reporting Guidelines, 2019). Rather than encouraging a reduction in emissions, the domestic framing instead encourages 'outsourcing' (Baumert et al., 2019; Malik and Lan, 2016) emissions overseas. In order to halt this process of burden-shifting, 'major economies must recognize that even strong regulation on domestic emissions in major economies may not be effective in reducing total global emissions due to their imported carbon footprint' (Moran et al., 2018: 8).

Recommendation 2: Coordination of Policy

10. The recent announcement of the UK's sixth carbon budget in April 2021, saw the UK commit to reducing net carbon emissions by 78% compared to 1990 levels. Nevertheless, if these emissions are to be meaningfully eliminated, rather than simply moved, coordination of government policy is key. Central to ameliorating this broader issue is understanding how responsibility for complex, international supply chains and their impacts is disaggregated between government departments. As exemplified in the UK government Environmental Reporting guidelines (2019), domestic environmental management, waste and sustainability are managed by The Department for Environment, Food and Rural Affairs [DEFRA], whilst carbon accounting and supply chain emissions fall under the remit of the Department for Business, Energy and Industrial Strategy [BEIS]. Adaptation to climate change impacts domestically is overseen by DEFRA in partnership with the Environment Agency, amongst

others, whilst adaptation overseas is the remit of the Foreign, Commonwealth and Development Office [FCDO].

11. This range of actors involved in the management of UK climate change reflects the breadth and scale of the issue. Yet the distinct approaches to governance practiced by each agency introduces issues of competing and sometimes counterproductive incentives. Whereas domestic environmental regulations are stringently monitored, and domestic carbon accounting mandated, supply chain environmental impacts and emissions are subject only to voluntary reporting. In some respects, this reflects the contrasting remits of DEFRA – responsible squarely for domestic environmental management – and BEIS – whose dual responsibility for both 'business' and 'industrial strategy' that incentivises a lighter tough on regulation. Nevertheless, the ultimate result is to incentivise offshoring of emissions and industrial environmental impacts, a process demonstrated throughout this report.
12. In contributing to the intensity of climate change impacts overseas, therefore, strict domestic industrial regulations set out by DEFRA, combined with somewhat looser international guidelines set out by BEIS, effectively undermine the sustainable development and adaptation goals overseen by the FCDO. This is not only environmentally damaging, but fiscally inefficient. Yet in a positive sense, the coordination of government objectives and budgets has the potential not only to deliver meaningful improvements in the sustainability of UK business, but to do so without additional investment of government funding.
13. UK government agencies related to industry, development and climate finance must be encouraged to work collaboratively, rather than discretely, in order that their goals complement each other rather than working against one another. First, further co-ordination of regulation between DEFRA and BEIS – including more stringent supply chain monitoring intended to match the regulation set out by DEFRA – will attend to reducing the incentive to offshore emissions. Second, co-ordination of BEIS supply chain regulation with FCDO development and adaptation goals is needed, in order to ensure that British business overseas does not contribute to undermining FCDO funded adaptation and sustainable development programs in the global South.

Recommendation 3: Definition of Supply Chains

14. In the context of our increasingly interconnected global economy, a key issue facing both carbon emission mitigation and climate change adaptation efforts is the difficulty of delineating the true extent of the supply chains contributing to the production of UK goods. Companies are currently given the freedom to define their own supply chain, both for their (voluntary) emission reporting obligations and for the purposes of any commercial claims made concerning waste, recycling and environmental impacts. This self-definition of supply chains presents significant problems in terms of emissions reporting. Neither buyers themselves, nor intermediary firms along the supply chain, are incentivised by this system to discern the complex processes that supply them, resulting in oversimplified supply chains in which only primary actors are represented.
15. This system presents three problems. First, it incentives the subcontracting of more environmentally destructive processes to subsidiary operations, beyond the regulation of buyers oversight: a process that renders supply chains artificially simple to regulate. Second, it allows supply chains to be conceptually shortened, often hiding the true distances travelled by raw materials in the course of producing UK goods. Third, it elides the

complexity of production processes, presenting supply chains as fundamentally linear, where in reality they depend on networks of industrial producers working in collaboration, each element of which carries its own environmental impact.

16. Given the announcement, in the recent sixth carbon budget, that emissions from shipping will form part of the UK's net zero commitments, this failure to account for the true extent of supply chains and the systems of shipping that support them, presents a significant issue. In the case of the garment industry, current assessments of the length of shipping supply chains – and thus the carbon emissions with which they are associated – are significant underestimates and it is likely that similar issues prevail elsewhere. Greater regulation and oversight of the provenance of raw materials within complex supply chains is therefore an essential precondition not only for meaningful compliance with the UK's upcoming carbon commitments, but also the ability to monitor the environmental impacts of UK trade as a whole. To be genuinely meaningful, moreover, such monitoring must extend beyond a reliance on voluntary self-reporting of corporate supply chains.

Recommendation 4: Intensified Climate Impacts in the Global Economy

17. As highlighted in the case of Cambodia, Sri Lanka and the South Asian brick belt, the contexts within which climate impacts emerge are structured in predictable ways by economic processes, shaping the manifestation of climate change in certain areas, and thus directing and intensifying its impacts. Whether this takes the form of local resource depletion, such as water or forest wood; or local environmental degradation in the form of water or airborne pollutants, the impact on health and livelihoods compromises the adaptive capacity of those affected, intensifying the impacts of the changing climate where they are felt. These local environmental impacts worsen the impacts of climate change in the vicinity of production processes, shaping a geography of climatic precarity in which large scale climatic and local economic factors combine to generate an intensified geography of climate change impacts.
18. Those subject to this kind of complex climate risk face high levels of exposure to climatic hazards, low levels of capital to adapt and high levels of risk intensification engendered by local environmental degradation linked to supply chains extending beyond the local area. That these supply chains are often linked to global Northern consumers presents both responsibility and opportunity: the necessity to act, but also the ability to do so. Understanding climate impacts in this context therefore requires a monitoring framework capable of extending beyond geographical boundaries, in order to better reflect the mobile processes of trade shaping environmental change in the global South.

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