

Overall assessment

I found this to be an interesting and potentially useful paper. The argument that domestic markets have received less attention than international trade in land-system research is worth making, and the effort to unpack why published estimates of the role of trade vary so widely is helpful. The distinction between attributional, marginal, welfare-based, and capital-investment approaches is particularly interesting and important because these approaches answer somewhat different questions about responsibility.

My two main concerns are

1. I kept coming back to a broader question: what exactly is the research agenda being proposed? Is the argument that land-system science should move toward production-based accounting? Or that, within national land footprints, researchers should continue to distinguish domestic and international demand but devote much more attention to the domestic component? I think the latter may be what the authors mean, but it should be made much more explicit. A conceptual figure near the beginning of the paper could help by showing the production side, the split between domestic and international demand, the different attribution approaches, and the points at which governance can operate.
2. Relatedly and most importantly, the paper would benefit from being clearer about who needs these distinctions and for what decisions. A national government, a subnational government, a corporation, and an international standard-setting body may each need a different attribution lens and may find domestic versus international component critical or entirely irrelevant. At several points the manuscript treats 'who is responsible?' as if it were a single question, when in practice it may mean: who is associated with the impact, who benefits, who has leverage, who has legal authority, or who is expected to report. Those are not necessarily the same actor.

Major comments

1. Global averages may obscure the contexts in which international trade remains especially important

The headline comparison between international and domestic markets is presented at the global level. I wonder whether an important part of the story is lost through this aggregation. If the same analysis were broken down by country, income group, or perhaps low-income tropical countries specifically, I suspect the domestic/international proportions would look quite different across contexts. Some countries may be dominated by domestic demand, while export-oriented commodity producers may have a much larger share of land-use change or biodiversity impacts linked to international markets. I am thinking Brazil versus Indonesia/DRC/cote d'ivoire? If one were to attribute land / deforestation footprint into domestic versus international after attribution to specific drivers (i.e. soy, cocoa, coffee, palm) and comparing their demand, would the argument hold?

I would encourage the authors to explore this heterogeneity directly, or at least discuss it. Can the paper say something about the kinds of countries or land-use systems in which domestic demand is the more important driver (rather than simply identifying a few countries in Figure 3, which any way are not consistent across the different studies), and the contexts in which an international trade focus remains essential? This would make the central argument more nuanced and policy-relevant. Without such a

breakdown, the global figure risks suggesting that international trade is generally a secondary concern, when that may be true globally but not necessarily for particular countries or commodity frontiers.

2. The manuscript should state more clearly what shift in research practice it is actually proposing

I am not completely clear whether the paper is advocating a move away from consumption-based approaches toward production-based approaches, or whether it is arguing that consumption-based work should retain the domestic/international distinction and then examine the domestic component in much greater detail. These are different recommendations.

My reading is that the paper is really making the second argument: continue to trace how land-system impacts are linked to demand, but stop treating the domestic share as an undifferentiated residual. If so, I think this should be stated explicitly. A conceptual figure early in the manuscript could be very useful here and could then be referred back to later when domestic markets, subnational flows, and responsibility are discussed.

3. The paper could say more about why domestic framing has been missing from the land systems science

The manuscript notes that international trade has received disproportionate attention, but I think the historical and governance reasons for this deserve a little more reflection. As authors mention in the introduction, increasing globalization, liberalization of trade, and the growing distance between production and consumption led to the increase focus on international trade/telecoupling. The above dynamics made transboundary environmental harms both visible and politically difficult: environmental impacts could be generated in one jurisdiction by demand in another, while national governments had limited authority over consumers and firms outside their borders.

By contrast, impacts linked to domestic markets sit within a national regulatory system where governments already have at least some formal authority over land-use planning, environmental regulation, agriculture, infrastructure, and reporting. That difference may help explain why the international side attracted so much research attention? I am speculative here. I think acknowledging why domestic didn't receive attention would strengthen the paper, because it would distinguish 'understudied' from 'previously ignored for no reason.'

4. The review methodology is reasonable, but are we certain the most important papers have been included?

The authors explain that studies were identified through their knowledge of the literature and snowballing, and clearly state that this is not a formal systematic review. I do not think a full systematic review is necessarily required. However, because the manuscript makes arguments based on the range and distribution of published estimates, readers need confidence that major studies have not been omitted. For instance, the authors should consider including Kastner et al. ([https://www.cell.com/one-earth/fulltext/S2590-3322\(21\)00528-5](https://www.cell.com/one-earth/fulltext/S2590-3322(21)00528-5)) review study and check if all the global studies in the paper are included.

5. 'Responsibility' needs to be unpacked more carefully

The paper moves between consumers, producers, investors, countries, and markets when discussing responsibility. There is a governance and reporting dimension here. For many countries, major sustainability assessments, land-use reporting systems, and international reporting commitments are organized primarily at the national level. That does not make subnational information unimportant, but it does change the question. If a national government is ultimately responsible for reporting and implementing national policy, when does knowing which consuming region within the country is associated with an impact materially change the intervention? The paper should say more about that. Could try to include this aspect in the conceptual framework.

6. Section 5 would be stronger with a more detailed comparison of the four subnational mapping approaches

The paper identifies logistics surveys, subnational input-output analysis, gravity models, and product traceability data. At present, this section reads more as a list of available methods than an assessment of them. A short table comparing strengths, limitations, data requirements, spatial resolution, uncertainty, and appropriate use cases would improve the section considerably. This is especially important because later claims about differentiated responsibility depend on how confidently these methods can reconstruct actual domestic flows.

Minor and line-specific comments

- The 13–94% range is striking, but it may be too aggregated to function as a single headline result. I am not sure the combined range is the most informative headline because it pools different impact categories and very different attribution approaches. Could the authors report ranges separately for land use, land-use change, biodiversity loss, and land-use emissions? It would also be useful to reproduce Figure 1 in the supplementary material as separate panels by impact category. This would help the reader see whether variation is mainly within impact categories or between them.
 - Lines 20–23: The opening paragraph is dense. I would split the second sentence. Also, 'the source almost one quarter' should read 'the source of almost one quarter' or 'accounts for almost one quarter.'
 - Lines 32–34: The statement that trade dependency is used as a geopolitical weapon is strong. I would add a concrete example or citation rather than leaving this abstract.
 - Lines 93–102: Please identify the Pendrill and Chaudhary studies by year in the text when they are discussed.
 - Lines 98–99: The statement that exports are typically high-value products is ambiguous. Does this mean exported products have higher unit values than comparable domestically sold products, or that high-value commodities are disproportionately represented in trade?
 - Lines 119–123: Add publication years when referring to Bergmann and Lyu so the reader does not have to search the figure or reference list.
 - Lines 171–174: Please double-check the statement regarding India and Indonesia against Figure 3; visually, Indonesia appears prominent in several datasets.
- Lines 219–225: The resilience discussion is quite brief relative to the prominence given to resilience in the abstract and conclusion. Either develop this section further or reduce its prominence in the framing. There are all sorts of dynamics at play nationally, for instance national reserves and the

ability of govt. to move food from one part to another rather quickly versus trying to source it internationally when export embargos are in-place.

Overall, I think the manuscript raises an important issue and has the potential to make a useful contribution. I am persuaded that domestic markets deserve more attention than they currently receive. I am less persuaded, in the current version, that the global cross-study comparisons support all of the conclusions drawn from them. My main recommendation is therefore to sharpen rather than abandon the argument: be clearer about what the different attribution approaches actually measure, show more of the country-level or contextual heterogeneity hidden by global averages, explain exactly what research shift is being proposed, and demonstrate more concretely when subnational domestic-market analysis changes policy or governance decisions.