

Development of the GEIC indicator

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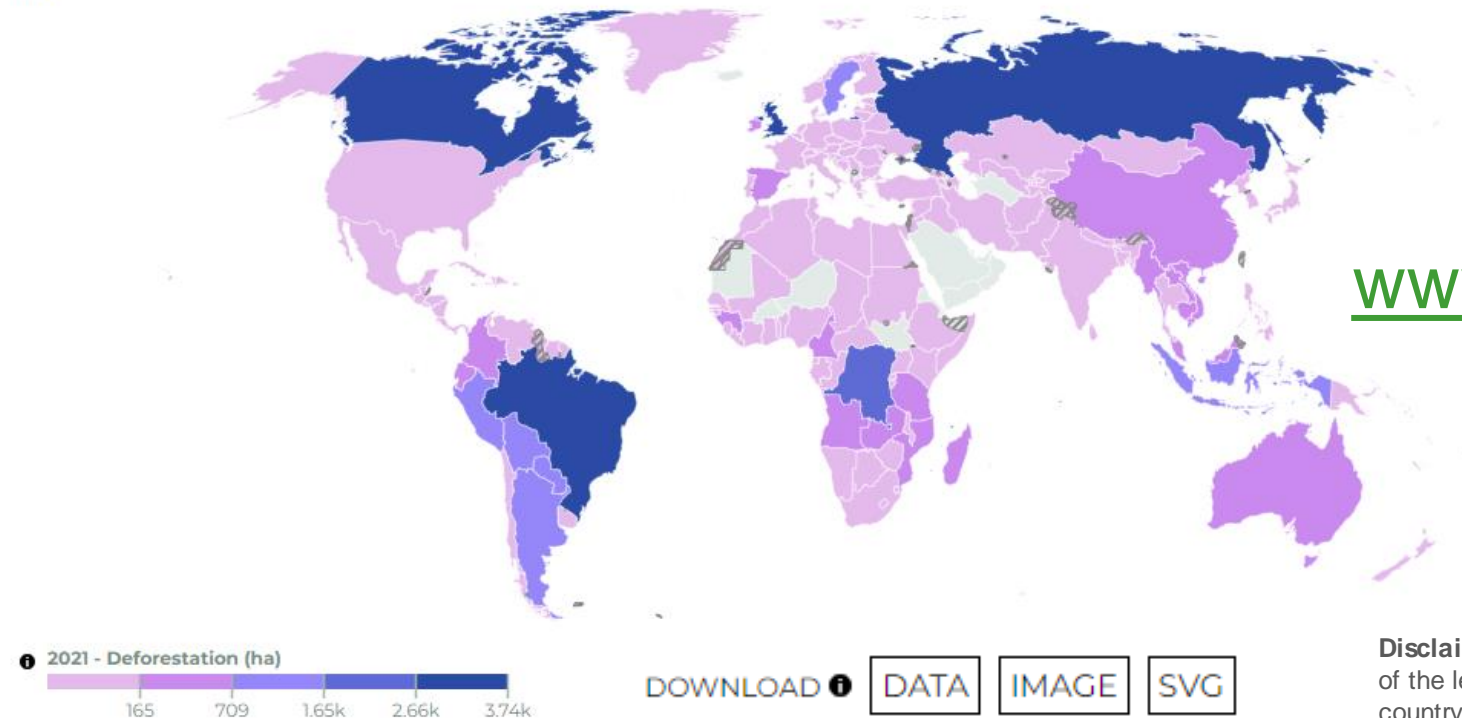
TRADE, DEVELOPMENT &
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What is the GEIC indicator?

DEFORESTATION (HA)
BY CONSUMPTION FLOWS

2021



www.commodityfootprints.earth

Disclaimer: The map shown is from Natural Earth Data and doesn't imply an opinion of the legal status of borders/territories. Hatched areas indicate disputed borders. The country / territory names come from the UN Food and Agriculture Organisation.

What is the GEIC indicator?

WHAT WOULD YOU LIKE TO SEE? Data model

Visualize associated with commodity

MORE SET

Harvested Area (ha)
The area (hectares) of land used for crops embedded in consumption. If the same crop is sown and harvested more than once per year in the same area, the area is counted as many times as harvested (covers crop products in dataset).

Deforestation (ha)
The area of forest (hectares) estimated to have been deforested to produce materials embedded in consumption (covers all products in dataset).

Deforestation Emissions (tCO₂)
Net tonnes of CO₂ released associated with the area deforested, including...

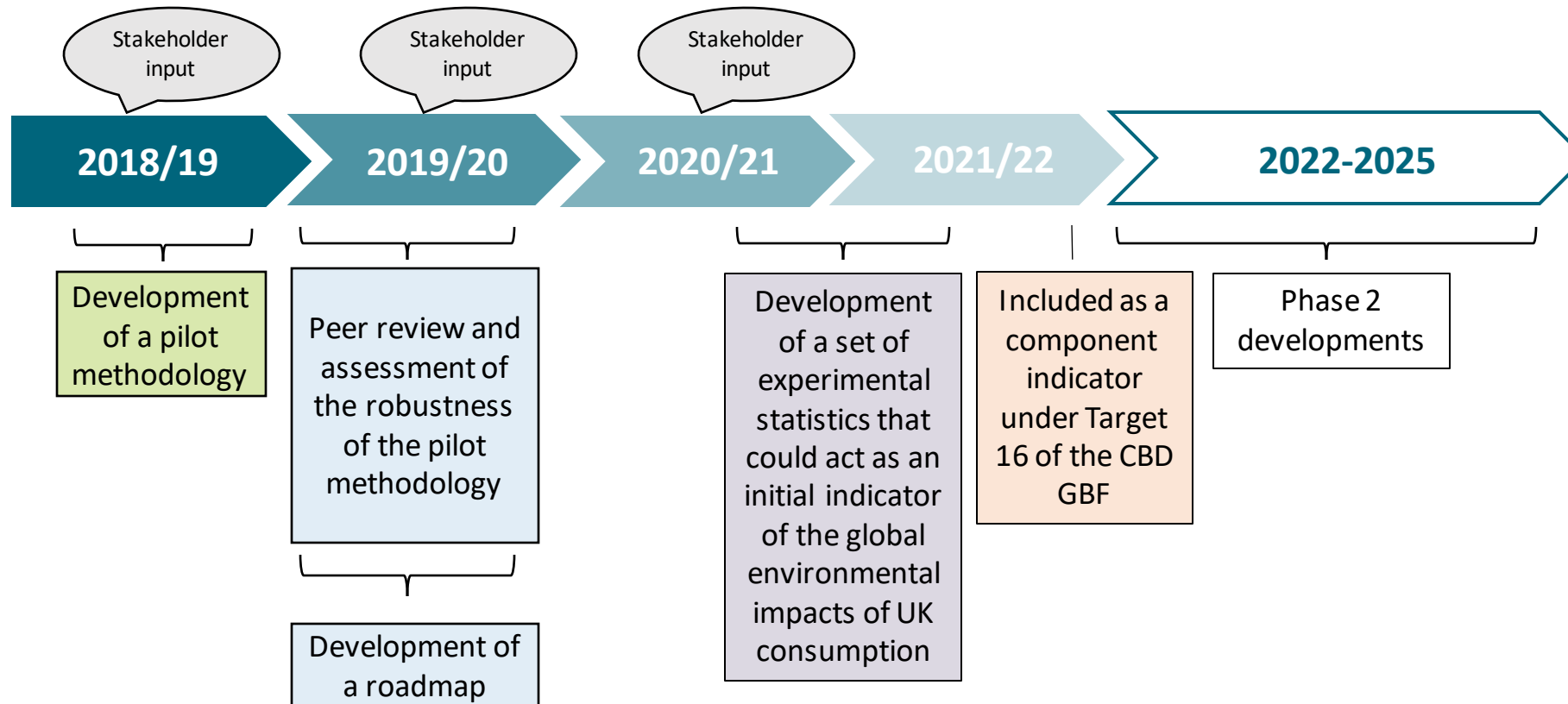
DEFORESTATION BY CONSUMPTION

2021

- Mass (tonnes)
- Cropland area harvested (ha)
- Deforestation (ha)
- Deforestation emissions (tCO₂)
- Deforestation emissions (excluding peat drainage) (tCO₂)
- Green water use (m³)
- Blue water use (m³)
- Scarcity-weighted blue water (m³)
- Predicted species loss (species)
- Species richness weighted area (species-ha)

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Development timeline



Policy context

- The UK's 25 Year Environment Plan aims to:
“avoid improving our domestic environment at the expense of the environment globally”
- The Outcome Indicator Framework calls for a way to measure this
- Environmental Improvement Plan recognises:
"the impact of our use of resources extends beyond our borders"
"shifting to more sustainable supply chains is important"

Indicator criteria

- **Relevance** - The degree to which the indicator meets user needs; focussed on ultimate outcomes (goals)
- **Sensitivity** - The degree to which the indicator varies according to changes in the phenomenon
- **Availability & timeliness** - Acceptable lag between availability of data and time period to which indicator refers to. Available for use by others, collect once, use many times.
- **Comparability & scalability** - Degree to which indicator can be compared over time and domain, scalable
- **Accessibility & clarity** - Ease with which users access and understand the indicator. Available metadata, illustration & accompanying advice
- **Coherence** - Degree to which indicators from different sources/methods, referring to the same phenomenon are similar
- **Statistical & methodological quality** - Statistically sound/robust methodology, understood bias and uncertainty. Efficient, affordable, secure data collection
- **Sensitivity to intervention** - The degree to which the indicator can vary according to changes in policy, business practices, human behaviour etc
- **Integrative/synoptic** - Provides an overview of the key components of the natural capital framework (ie pressures, condition of assets, services, benefits) and interrelationships between goals

Pilot projects

Consumption based metrics

- Investigated current best practice through a series of literature reviews
- Developed a method based on combining EEMRIO (Environmentally Extended Multi-Regional Input-Output) modelling with a spatially differentiated life cycle impact assessment
- Concluded that this had potential for use as an indicator

Certification

- Investigated the effectiveness and feasibility of the indicator put out for initial consultation (proportion of imports certified as being from sustainable sources)
- Developed a range of options for calculation, with differing levels of effort and accuracy
- Concluded that this was not appropriate for use as an indicator

International peer review process

- Six academic experts from around the world were identified and invited to take part in a peer review process
- Key conclusions were that the proposed approach was the most appropriate to take forwards, but recommendations were given about how to increase the specificity and resolution of the results

Stakeholder engagement process

- A stakeholder group consisting of those we thought might use the indicator once developed was convened to provide input from a user needs perspective
- This included policymakers, industry bodies and NGOs
- They were not able to see the data or have any indication of what the trends might show before the data release
- But they were able to help us with prioritisation of what should be in scope first, user testing of the dashboard with mock data, and describing the kinds of format that it would be most useful to provide the data in

Technical development process

- Finalisation of data sources
- Integration of data into the code and models
- Reporting on the limitations and caveats
- Publication as an official statistic
- Data visualisation and communication
- Scoping of additional commodities and impact types
- Improvement of data resolution

Final data sources

- UN FAO statistics
- Exiobase and GTAP MRIO trade statistics
- Hybridisation through SEI's IOTA model
- A range of environmental datasets, e.g. Pendrill et al / Singh & Persson; IUCN; Water Footprint Network, etc

Iterative process

