Follow up request:

Dear IUCN congress attendees,

We are seeking your opinions regarding a new online platform UNEP-WCMC are currently developing alongside the GCRF Trade, Development and the Environment Hub. The platform will act as a central repository for resources (i.e. platforms, tools, portals, inventories etc.) which explore the relationship between nature and commodity production, consumption, and trade.

We would like you to answer a very short, 5-question survey. It should take only 3 minutes to complete, and it requires no special expertise. Using your responses, we will be able to develop the platform according to your needs and objectives.

You can respond to the survey by clicking on this link: https://www.surveymonkey.co.uk/r/commoditiesandnature

Why complete this survey?

Many of the main drivers of biodiversity loss - including land-use change and direct exploitation of animals and plants and pollution - are strongly contributed to by the production of commodities. Although there are tools and data available to explain, navigate, and respond to these impacts of consumption, finding the right tools for understanding the impacts of these activities on biodiversity throughout complex supply chains can be a challenge. This platform seeks to bring together all these tools in one place in order to help users understand the impacts of production and consumption on nature.

Completing this survey will allow us to develop a platform which helps you to find the resources you need quickly and effectively to fill any knowledge gaps your organisation is currently facing.

Please feel free to share this survey with your networks. The survey will close on the 16th September. We encourage you to complete it before this date, otherwise we might not be able to represent your opinions or needs in our ongoing development of the tool.

Many thanks,

Neil Burgess
Principal Investigator, TRADE Hub

Understanding species threats in a globalised world:

Supply Chain assessments in conservation

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Understanding species threats in a globalised world: Supply Chain assessments in conservation

Thomas Brooks
Manfred Lenzen
Amanda Irwin
Francesca Verones
Abhishek Chaudhary
Jonathan Green
Neil Burgess
Juha Siikamaki
Arne Geschke

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@IUCNscience

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Measuring biodiversity impact from trade

5 September 2021 11.00 – 12.30

Thomas Brooks, IUCN Chief Scientist

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Égalité
Fraternité

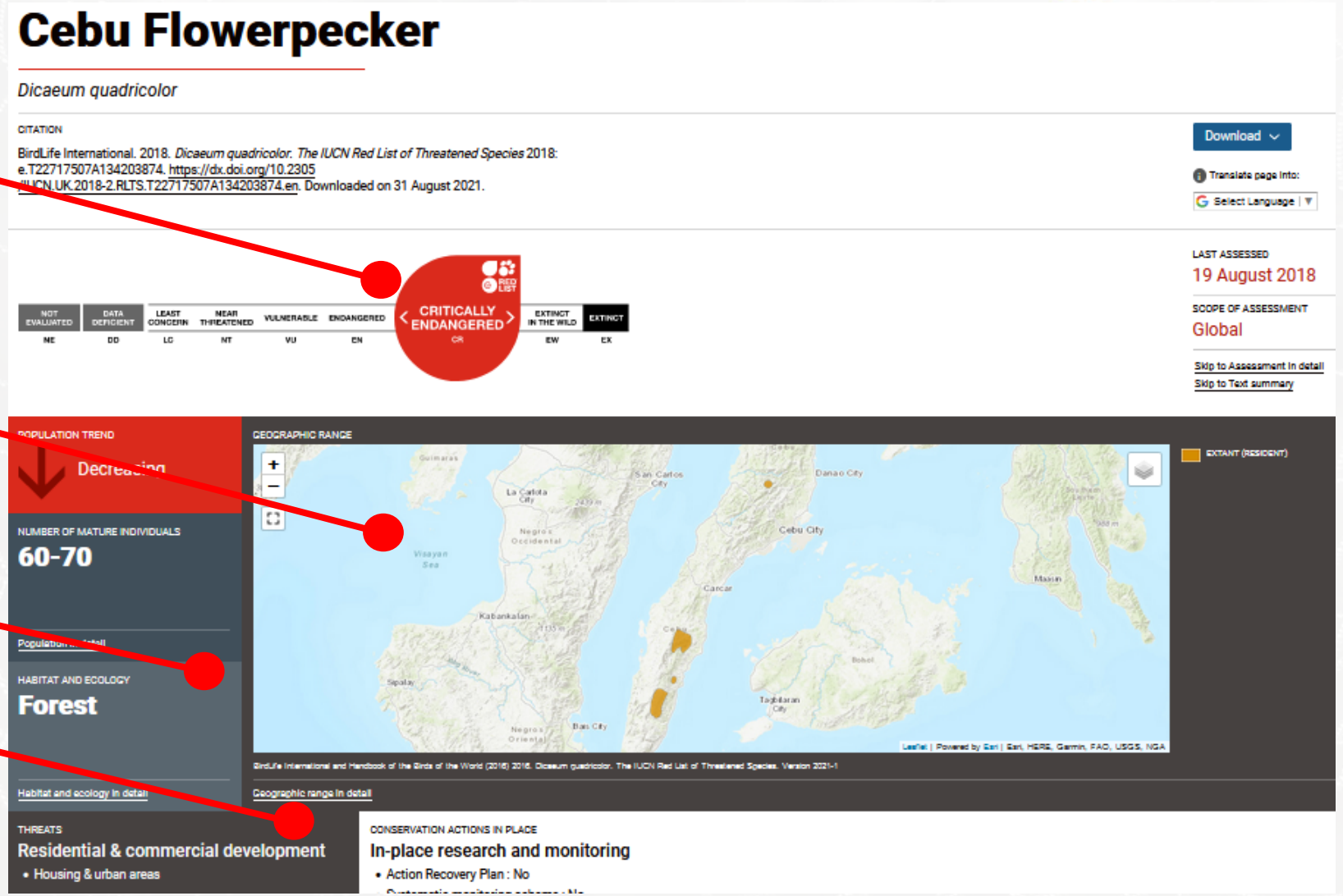
IUCN Red List of Threatened Species

Extinction risk categories

Range map

Classification of habitats

Classification of threats



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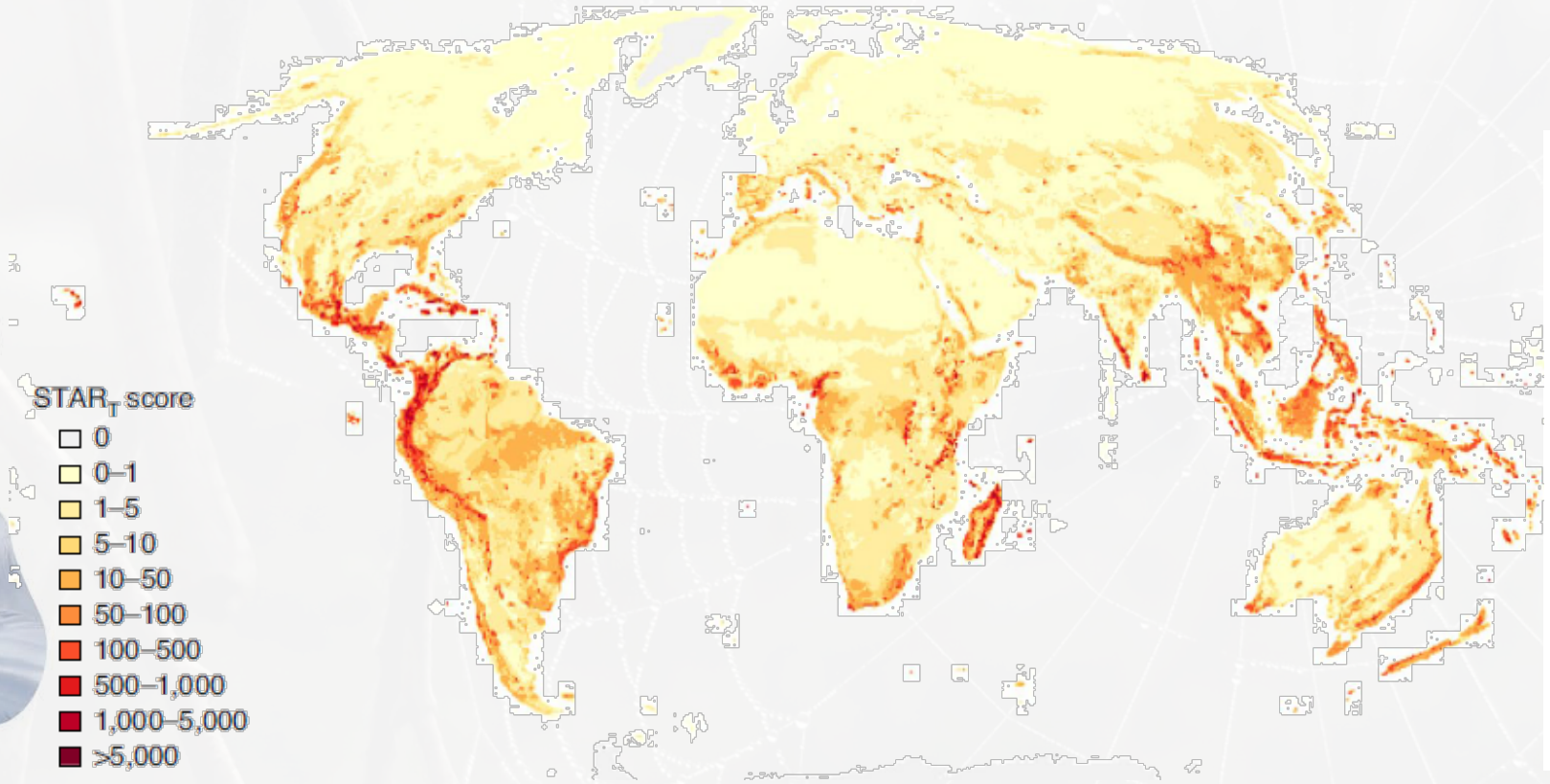
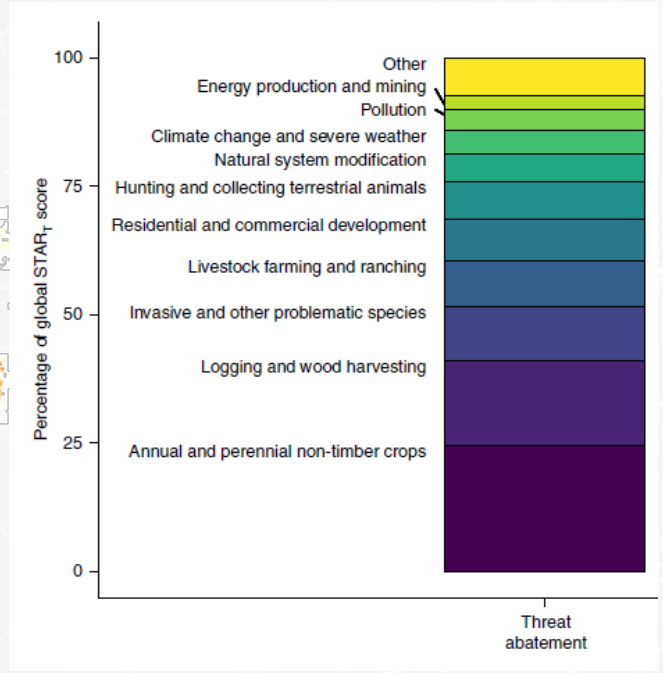
Mace *et al*. (2008) Quantification of Extinction Risk. *Conserv Biol* 24: 1424–1442; http://www.iucnredlist.org

STAR metric



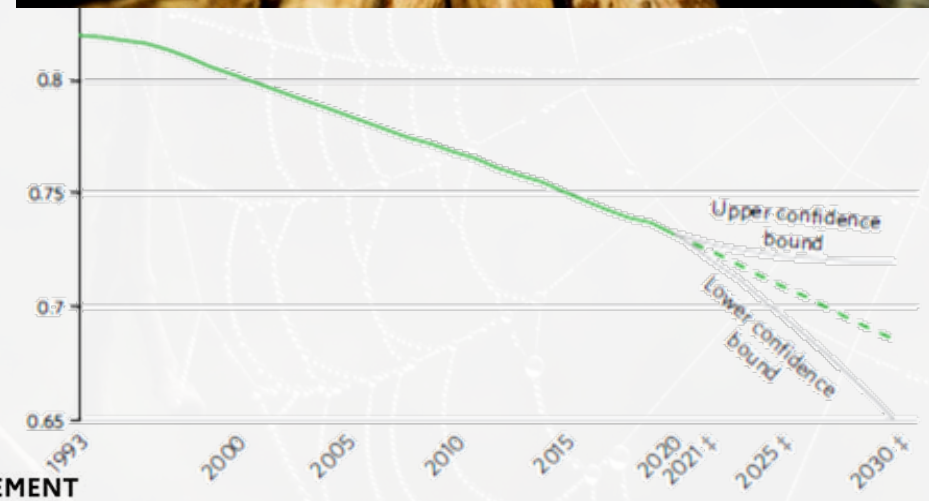


Mair *et al*. (2020) A metric for spatially explicit contributions to science-based species targets. *Nature Ecol Evol* 5: 836–844.

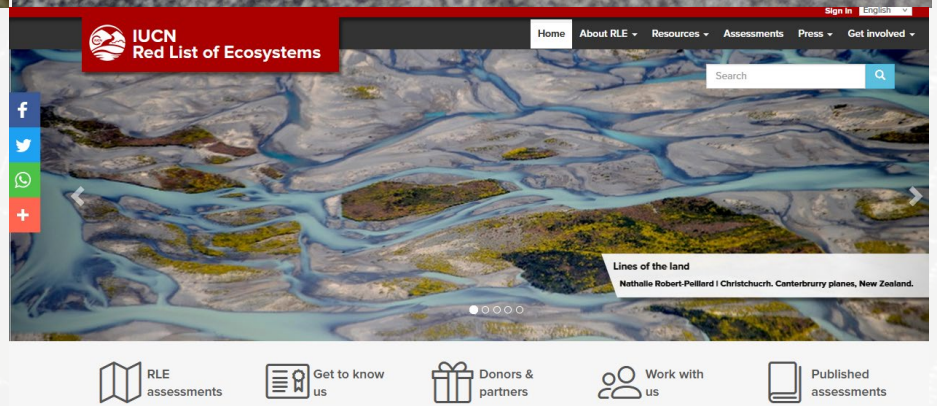
Key challenges

https://www.fondationsegre.org/action-plan-against-poaching-and-illegal-wildlife-trade/

https://abcbirds.org/program/cats-indoors/



https://unstats.un.org/sdgs/report/2021/



https://www.iucnrle.org/

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Learn more:
https://www.iucn.org/resources/issues-briefs/measuring-contributions-towards-biodiversity-targets

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How do we begin to understand complex global supply chains?

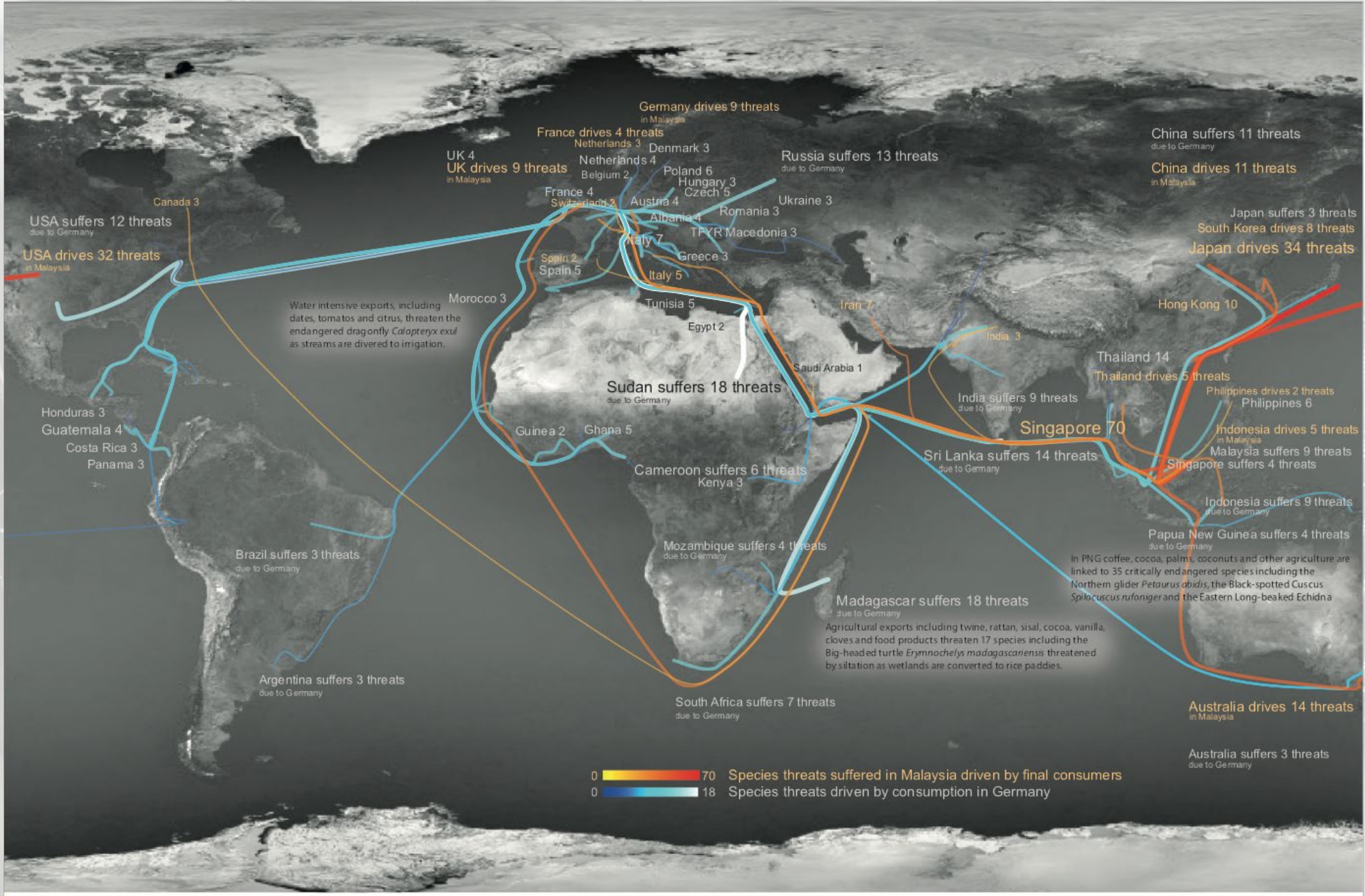

Figure 3S: Flow map of threats to species caused by exports from Malaysia (reds), and imports into Germany (blues). Note that the lines directly link the producing countries where threats are recorded, and final consumer countries. Processing stops in intermediate countries are accounted for but not explicitly visualized. Malaysia suffers 488 species threats domestically; exports, including palm oil, rubber, and cocoa, are linked to 276 of those. Germany suffers 321 species threats domestically and drives an additional 395 through its imports. Regional trade patterns can be observed (consumption in Southeast Asia drives impacts in Malaysia; German consumption drives impacts in Europe) but drivers and impacts are linked globally.

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By reflecting
on our affluence,

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and on global inequalities,

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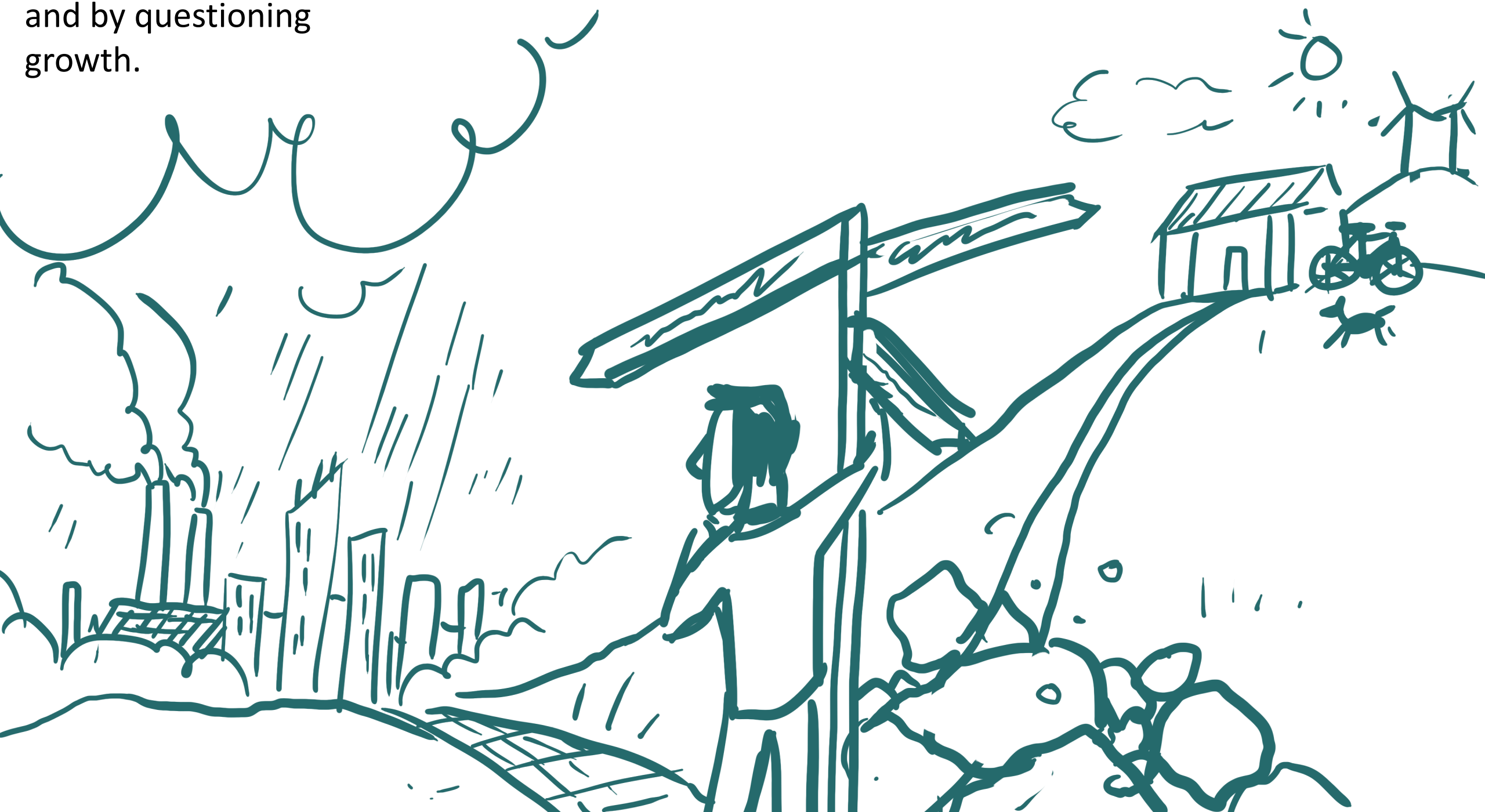
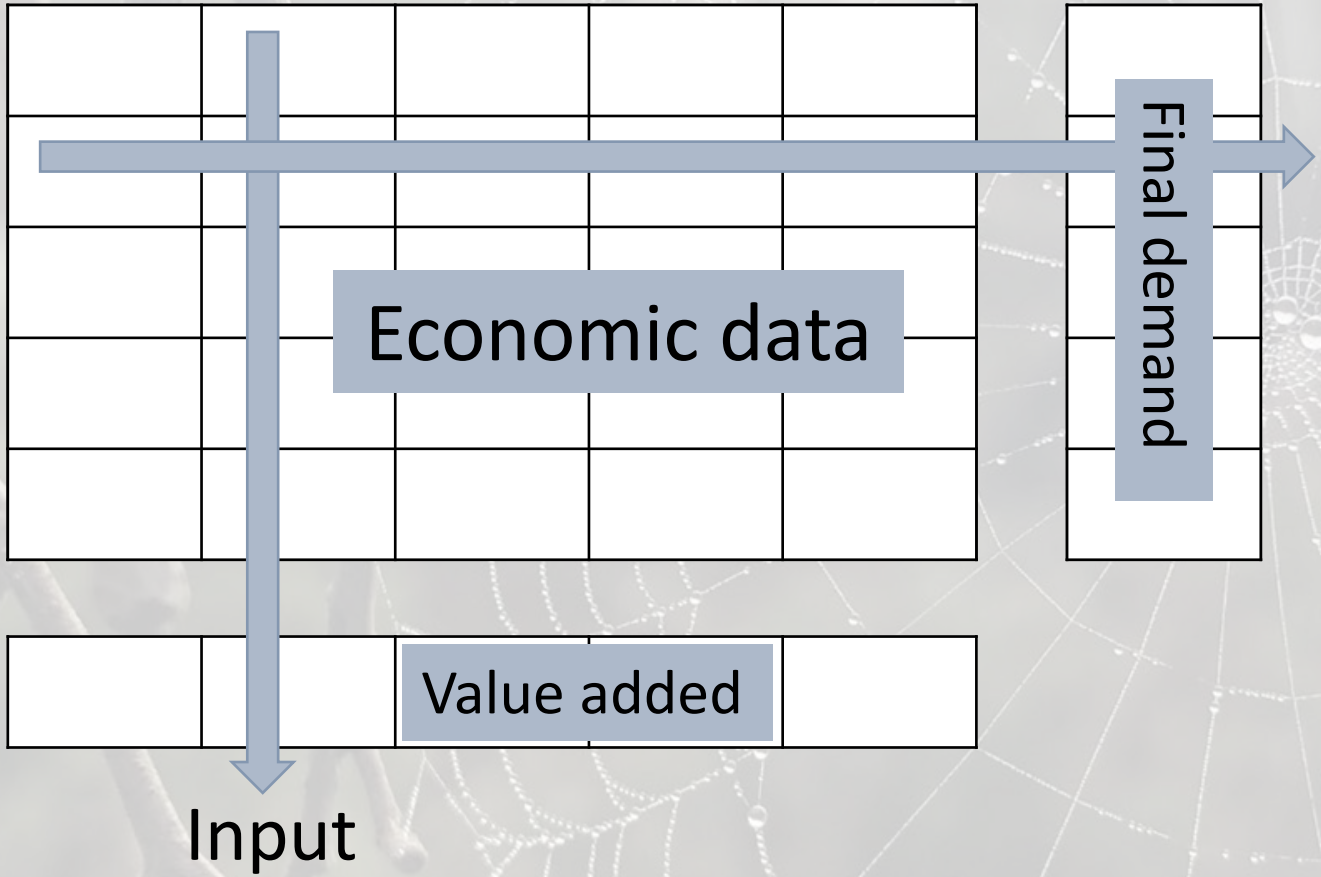
and by questioning growth.



Input-output analysis

Amanda Irwin

Input-output analysis



Capture all relationships between economic sectors in a national economy

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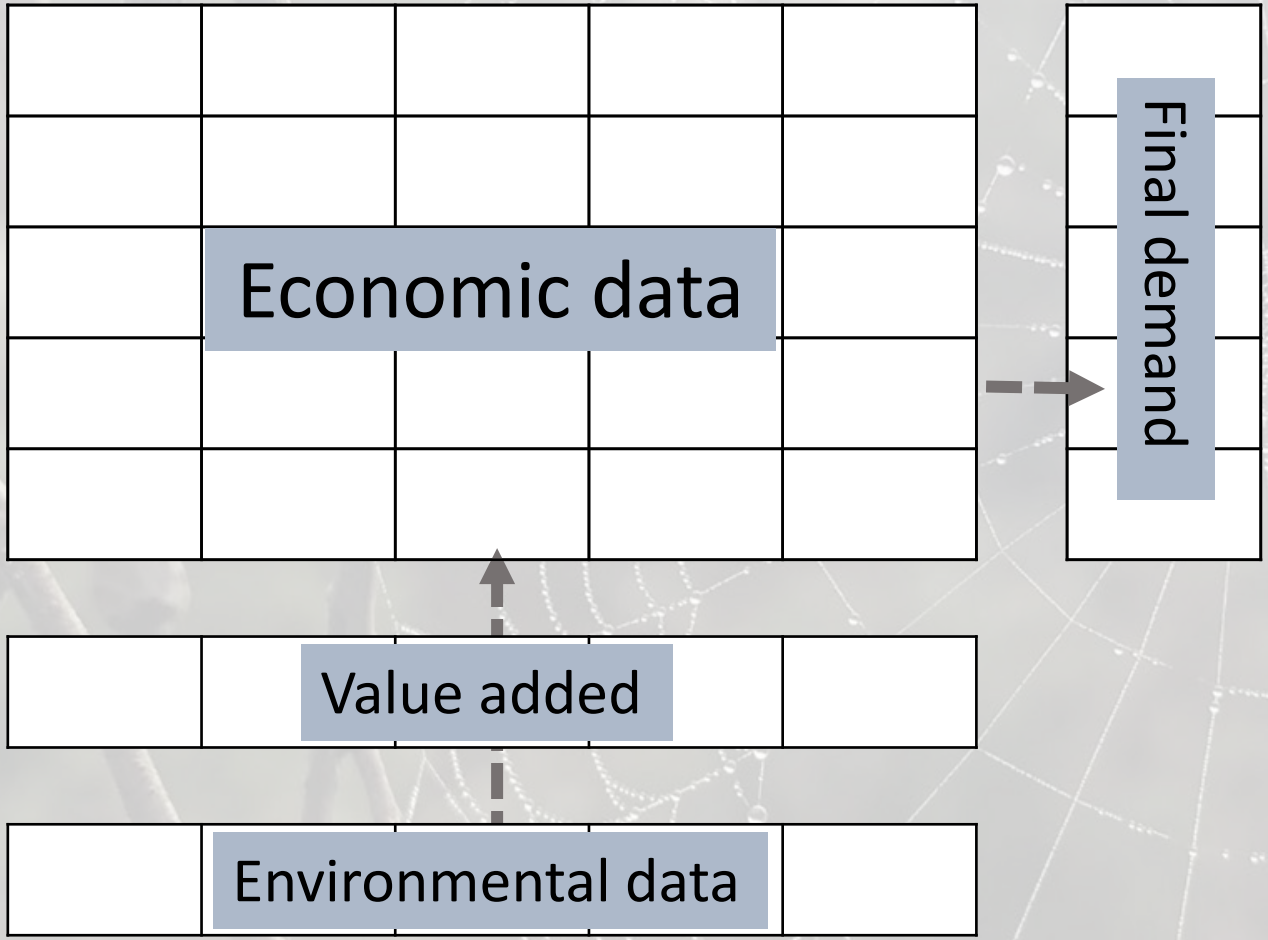
Input-output analysis



Trace the ‘flow’ of an environmental impact back through all economic interactions and identify all sources of demand which drove that impact

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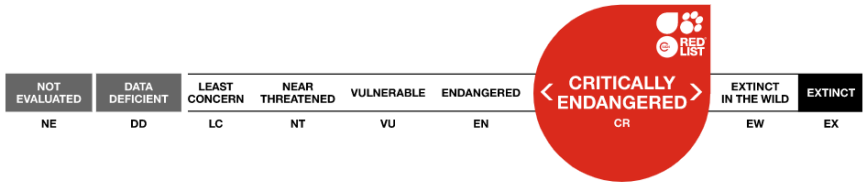
Input-output analysis

Bornean Orangutan

Pongo pygmaeus

CITATION

Ancrenaz, M., Gumal, M., Marshall, A.J., Meijaard, E., Wich , S.A. & Husson, S. 2016. *Pongo pygmaeus* (errata version published in 2018). *The IUCN Red List of Threatened Species* 2016: e.T17975A123809220. https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T17975A17966347.en. Downloaded on 24 July 2021.

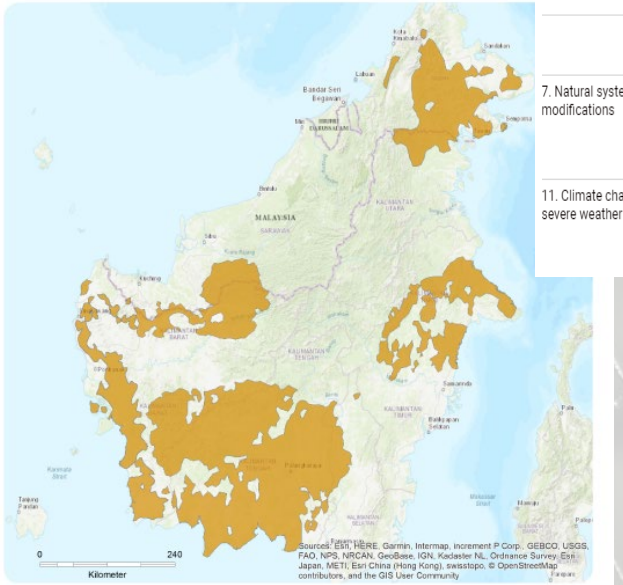


Habitat

1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland

Distribution Map

Pongo pygmaeus



CLASSIFICATION SCHEME

Threats			Timing	Scope	Severity
1. Residential & commercial development	1.1. Housing & urban areas		Ongoing	Minority (<50%)	Slow, Significant Declines
2. Agriculture & aquaculture	2.1. Annual & perennial non-timber crops	2.1.2. Small-holder farming	Ongoing	Minority (<50%)	Rapid Declines
		2.1.3. Agro-industry farming	Ongoing	Majority (50-90%)	Very Rapid Declines
	2.2. Wood & pulp plantations	2.2.2. Agro-industry plantations	Ongoing	Minority (<50%)	Very Rapid Declines
3. Energy production & mining	3.2. Mining & quarrying		Ongoing	Minority (<50%)	Slow, Significant Declines
5. Biological resource use	5.1. Hunting & trapping terrestrial animals	5.1.1. Intentional use (species is the target)	Ongoing	Majority (50-90%)	Very Rapid Declines
		5.1.3. Persecution/control	Ongoing	Minority (<50%)	Very Rapid Declines
	5.3. Logging & wood harvesting	5.3.5. Motivation Unknown/Unrecorded	Ongoing	Minority (<50%)	Slow, Significant Declines
7. Natural system modifications	7.1. Fire & fire suppression	7.1.1. Increase in fire frequency/intensity	Ongoing	Majority (50-90%)	Rapid Declines
11. Climate change & severe weather	11.1. Habitat shifting & alteration		Ongoing	Whole (>90%)	Slow, Significant Declines

Geographic Range

NATIVE

Extant (resident)

Indonesia (Kalimantan); Malaysia (Sarawak, Sabah)

NUMBER OF LOCATIONS

UPPER ELEVATION LIMIT

500 metres

LOWER ELEVATION LIMIT

0 metres

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Insights from research

LCA applications for quantifying biodiversity impacts

Francesca Verones & Abhishek Chaudhary

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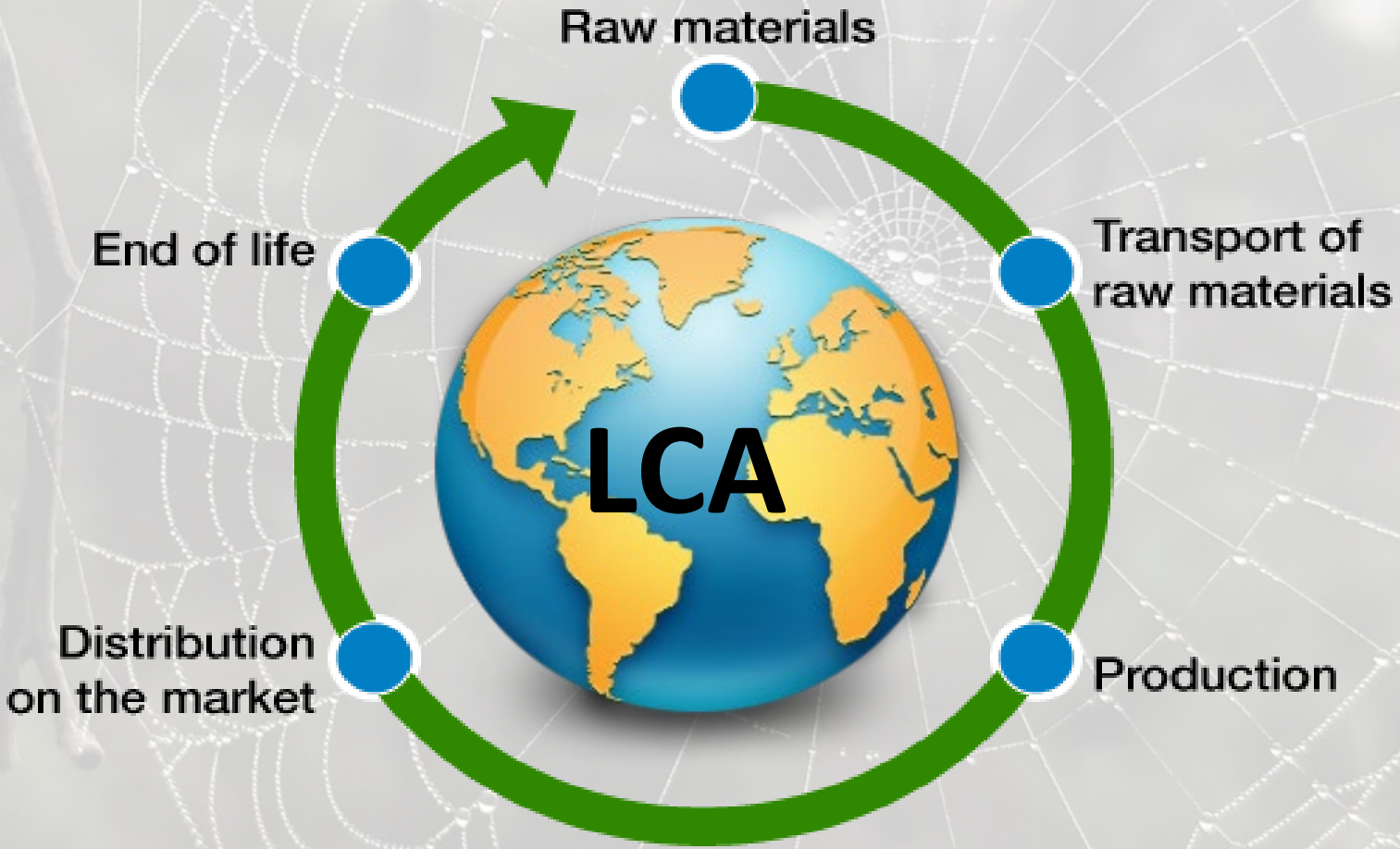
Life Cycle Assessment (LCA)



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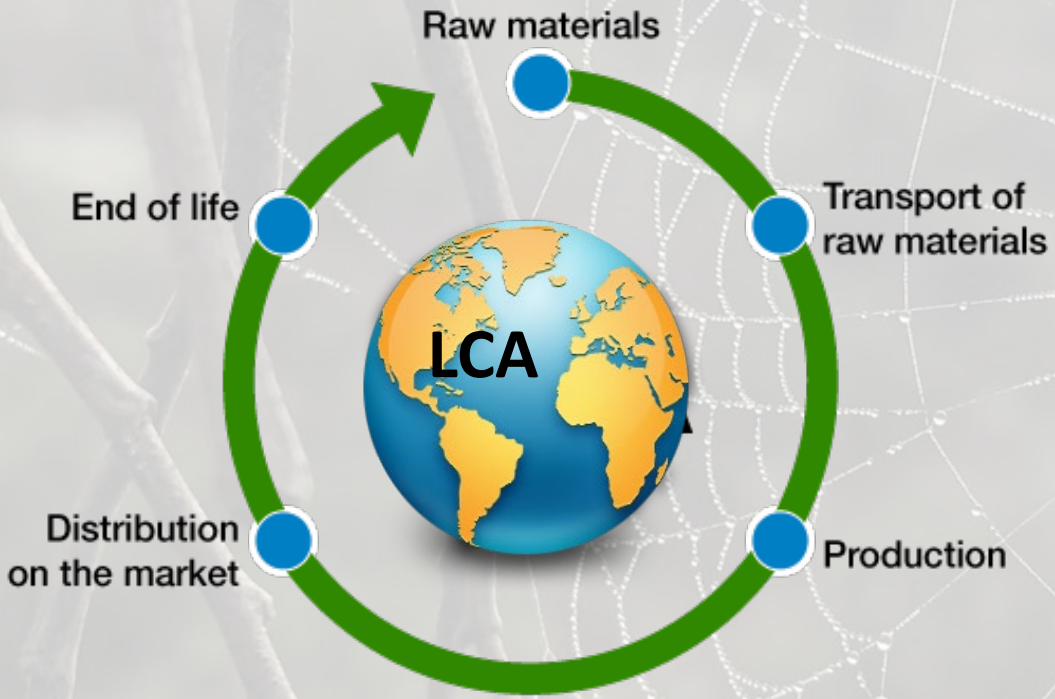
Why LCA?



1. Tool to identify **trade-offs** and **improvement potentials**

2. European Commission: **best framework** available.

   LCA used (e.g.):

   - in several **EU policies**
   - to define **emerging problems**

3. Incorporated into **decision-support tools and processes**

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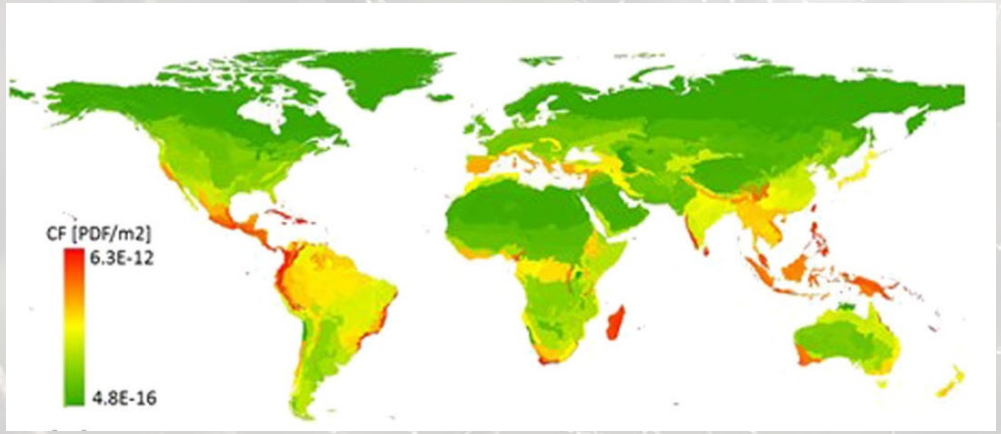
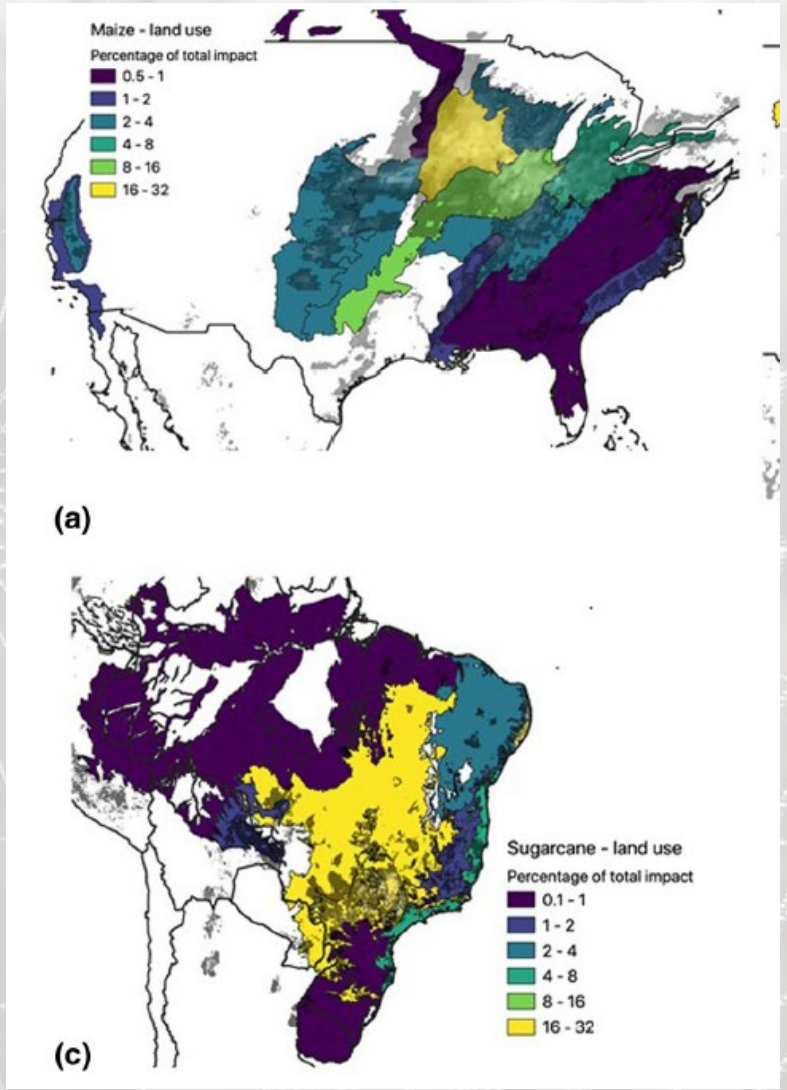
Example: Biofuel production



Land occupation by annual crops



Contribution of land use impact to total impact

Verones et al. (2020)

Product biodiversity footprinting

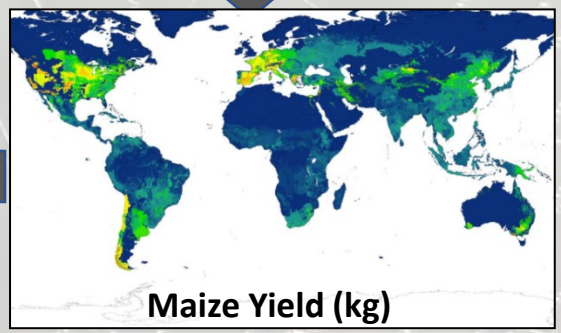
$$S_{lost,g,j}^{countryside} = S_{org,j} - S_{org,j} \cdot \left(\frac{A_{new,j} + \sum_{i=1}^{n} h_{g,i,j} \cdot A_{i,j}}{A_{org,j}} \right)^{z_j}$$

- Impacts for ~8000 crop x country combinations
- Connected with FAO food trade database

Local impacts

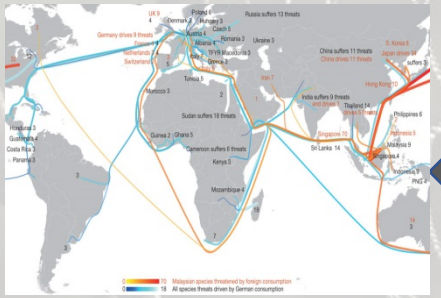
Regional impacts

Crop yields



Impacts per kg

Biodiversity Impacts traded



(Chaudhary & Kastner, 2016 *Glob. Environ. Change)*

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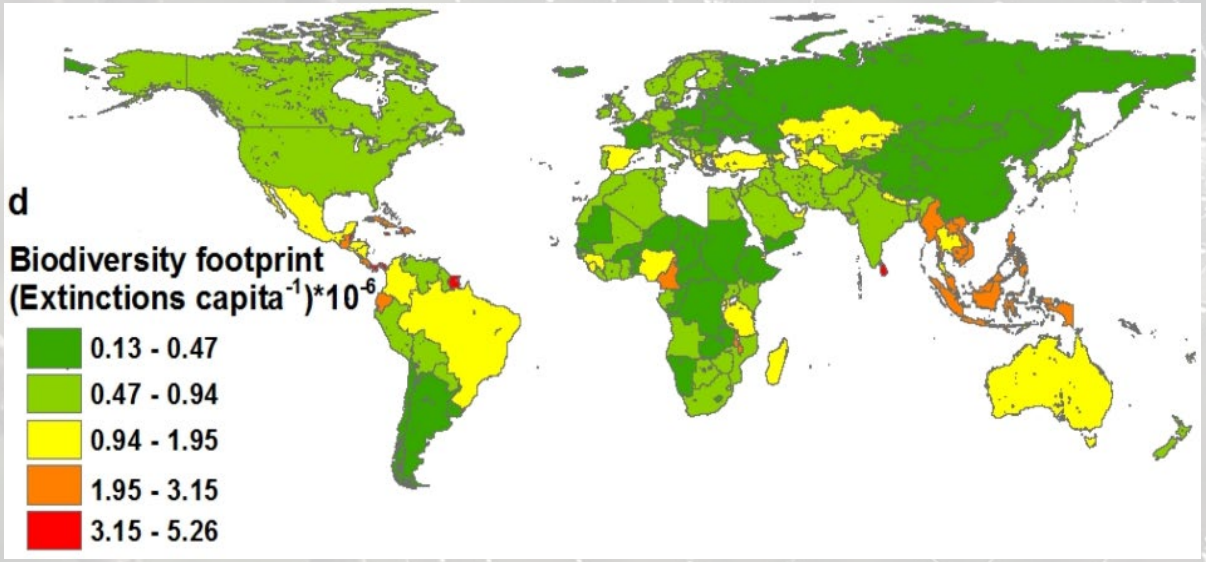
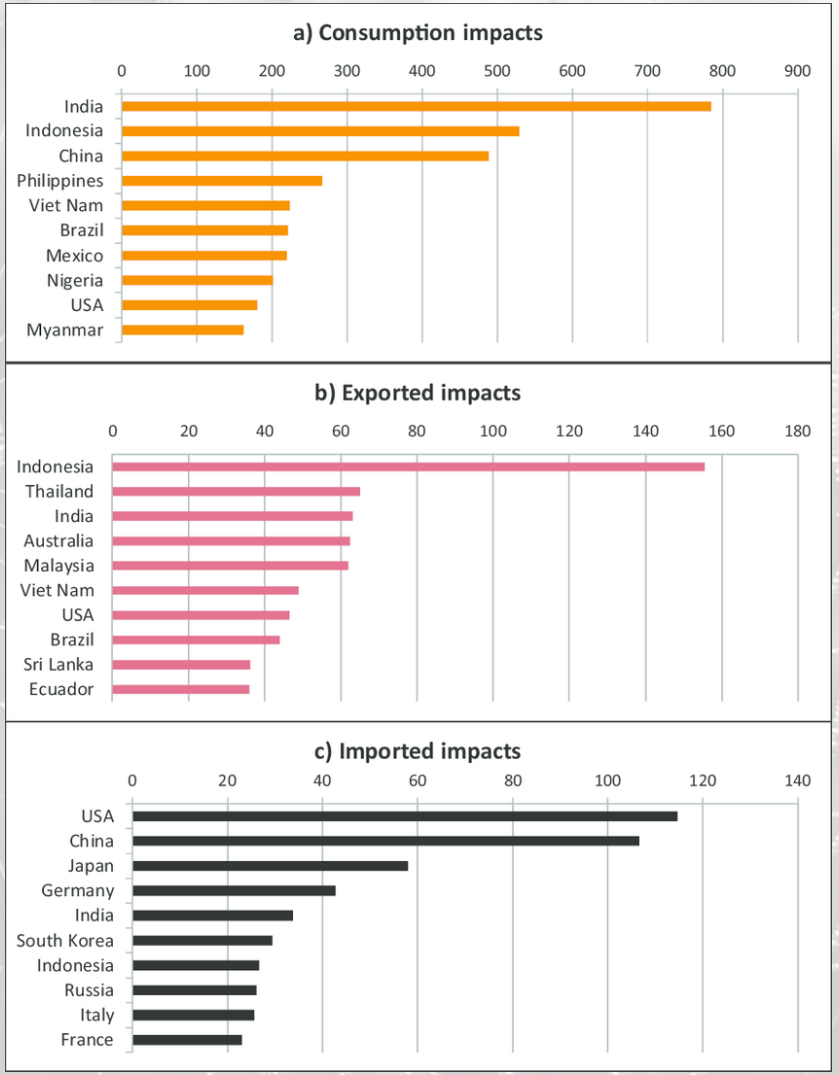
National biodiversity footprint





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(Chaudhary & Kastner, 2016 *Glob. Environ. Change)*

Regional species loss embodied in global food trade

Impacts in	Driven by	Mammals	Birds	Amphibians	Major causes	Rank area
Indonesia	USA	7	5	2	Rubber, cocoa, coffee	23
Indonesia	China	8	5	2	Palm oil, rubber	26
Mexico	USA	7	4	2	Coffee, vegetables, fruits	32
Indonesia	India	7	4	2	Palm oil, cashew, nuts	22
Thailand	China	8	4	1	Rubber, cassava, fruits	15
Malaysia	China	7	4	2	Palm oil, rubber	46
Indonesia	Japan	5	3	1	Rubber, coffee, cocoa	54
Ecuador	USA	5	3	2	Cocoa beans, coffee	189
Viet Nam	China	4	3	1	Cassava, rubber, rice	108
India	China	3	4	0	Cotton, castor, rapeseed	9
USA	China	2	5	1	Soybean, cotton	1
Australia	Indonesia	1	4	0	Wheat	11
Australia	Japan	1	4	0	Wheat, barley	10
Brazil	China	2	1	2	Soybean	2
USA	Mexico	2	4	0	Wheat, soybean, sorghum	3
Guatemala	USA	2	1	1	Coffee, bananas	243
Indonesia	Germany	2	2	1	Palm oil, rubber, coffee	125
Viet Nam	Indonesia	3	2	0	Rice	154
Indonesia	S. Korea	2	1	1	Rubber, coconut, palm oil	156
Sri Lanka	Russia	2	1	1	Tea	966

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(Chaudhary & Kastner, 2016 *Glob. Environ. Change)*

Global Environmental Change 38 (2016) 195–204

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journal homepage: www.elsevier.com/locate/gloenvcha

Land use biodiversity impacts embodied in international food trade

Abhishek Chaudhary[a,*], Thomas Kastner[b]

[a] Institute of Environmental Engineering, ETH Zurich, 8093 Zurich, Switzerland
[b] Institute of Social Ecology Vienna, Alpen-Adria Universität Klagenfurt, Schottenfeldgasse 29, Wien, Graz, A-1070 Vienna, Austria

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ABSTRACT

Agricultural land use to meet the demands of a growing population, changing diets, lifestyles and biofuel production is a significant driver of biodiversity loss. Globally applicable methods are needed to assess biodiversity impacts hidden in internationally traded food items. We used the countryside species area relationship (SAR) model to estimate the mammals, birds, amphibians and reptiles species lost (i.e. species 'committed to extinction') due to agricultural land use within each of the 804 terrestrial ecoregion. These species lost estimates were combined with high spatial resolution global maps of crop yields to calculate species lost per ton for 170 crops in 184 countries. Finally, the impacts per ton were linked with the bilateral trade data of crop products between producing and consuming countries from