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Pilot-study for the analysis of the
environmental impacts of commodities
traded in Switzerland

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[SETAC Europe 24th LCA Symposium](#)
24-26.9.2018

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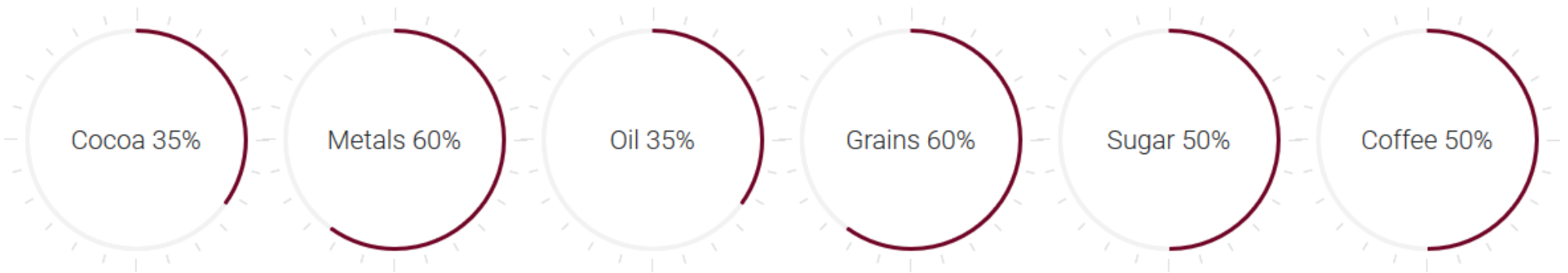
www.lca2018.setac.org

24-26.9.2018

Starting point

Switzerland, the global commodity trading hub

Share of global trade handled by Swiss-based commodity trading companies



www.stsa.swiss

- There is a public debate about the social and environmental responsibility of the financial sector in Switzerland
- The Federal Office for the Environment (FOEN) wishes to get better knowledge on the environmental impacts associated with this sector

Key questions for 16 selected commodities

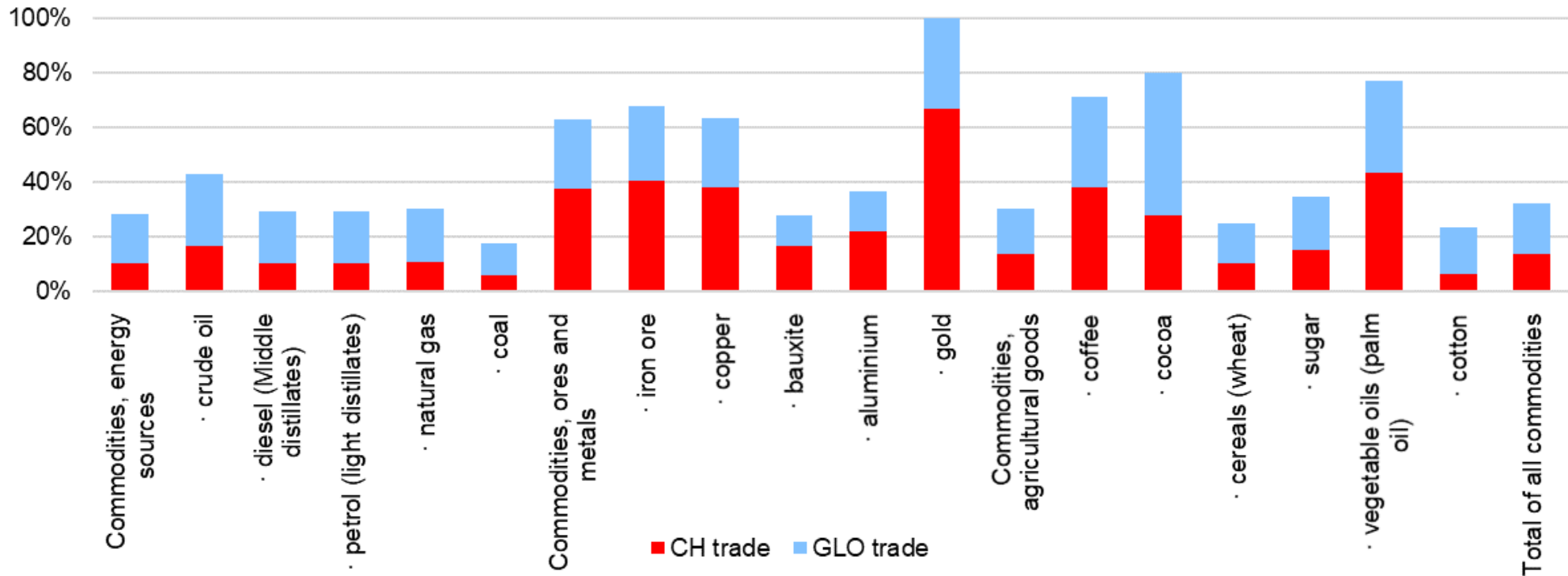
- What quantities are traded by Swiss companies?
- Which countries of origin are relevant for the global production of these commodities?
- What are the environmental impacts caused by the extraction, production and transport of these commodities?

Data sources for estimation of trades

- Global trading statistics
- Associations
- Single companies (bottom-up estimation)
- Literature
- Direct contacts
- Financial information by Swiss National Bank

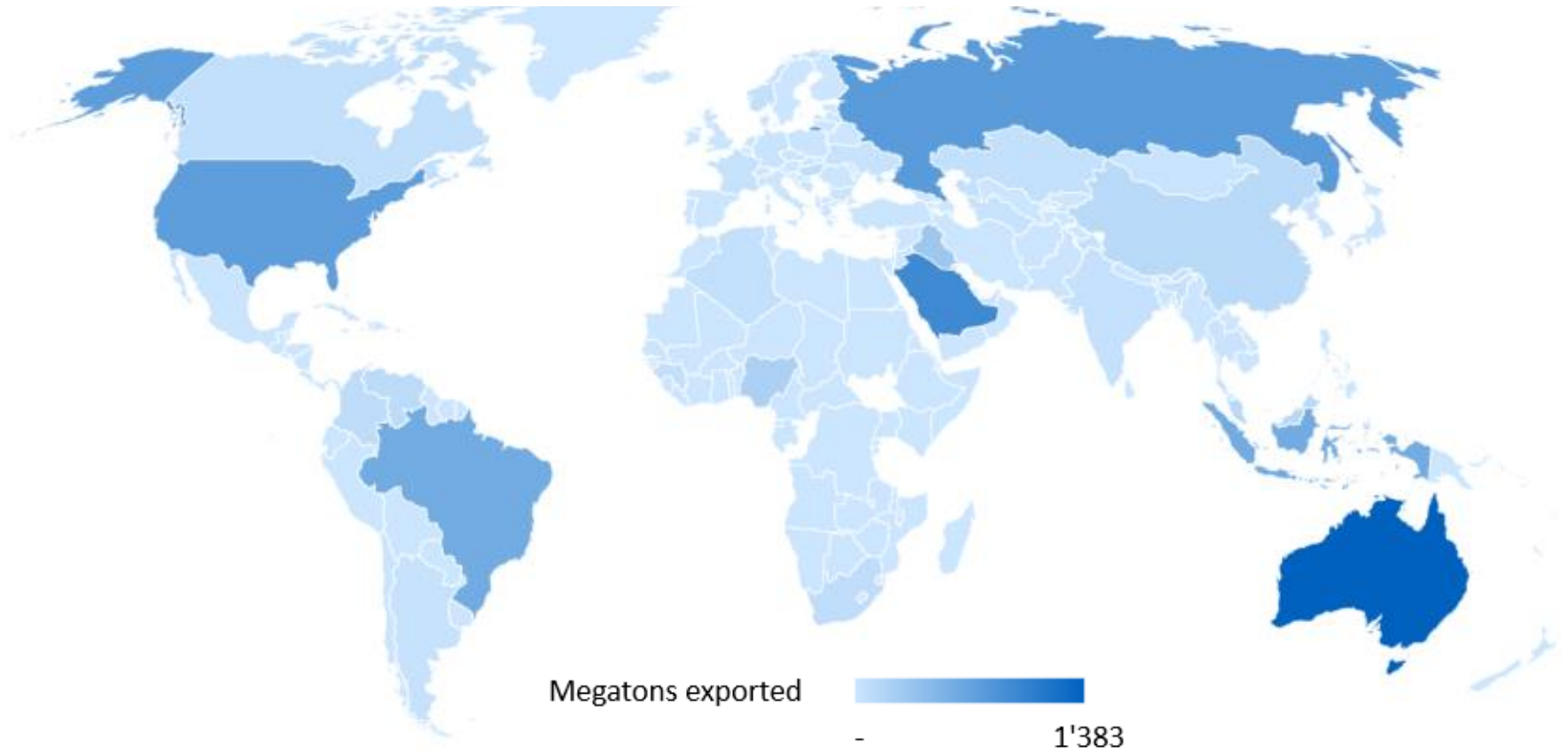
- Different system boundaries to monitor the activities of a Swiss company
- Here we look at all trades taking started from an office in Switzerland

Swiss and global trade as share of global production (=100%)



➤ A huge share of total global trade is traded by a Swiss company

Main producing countries for the commodities traded by Swiss companies (by mass)



➤ Commodities traded by Swiss companies are produced globally

System boundaries LCA

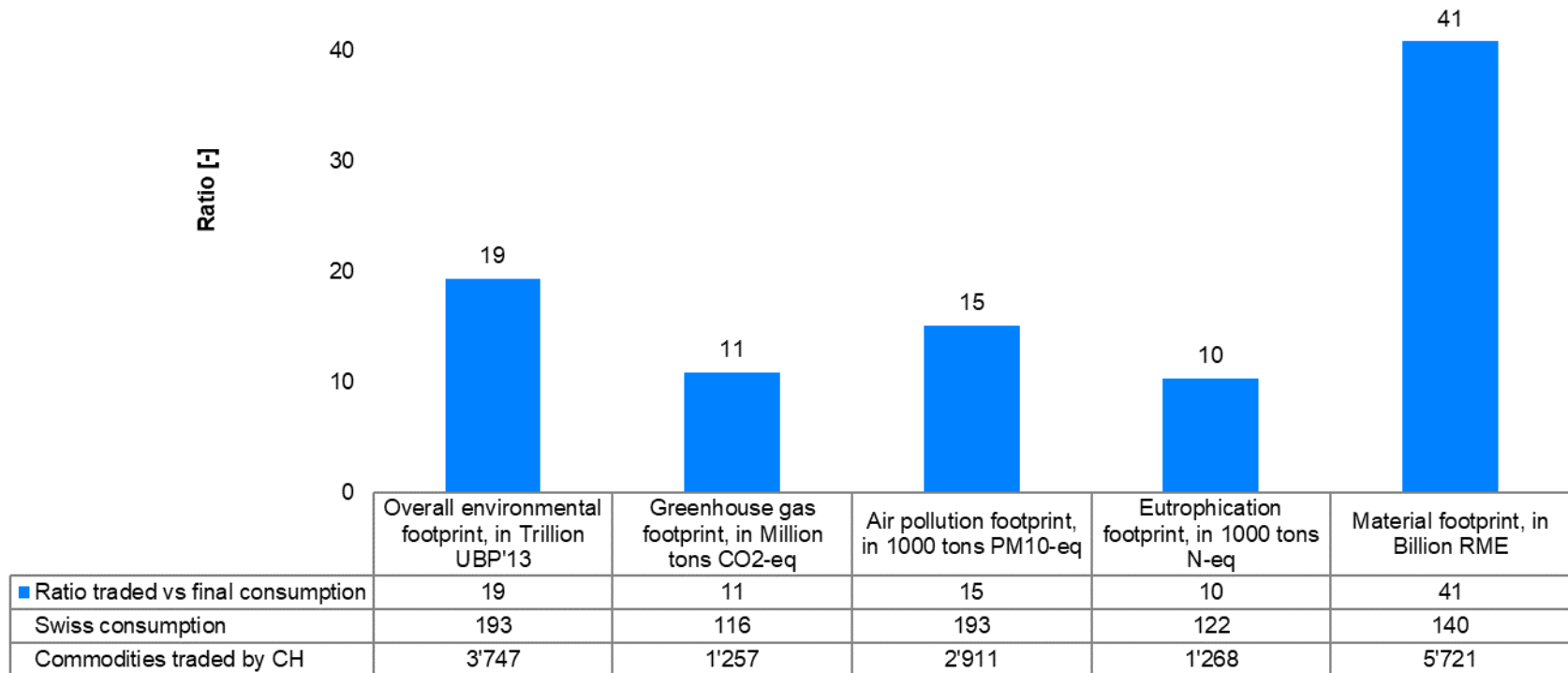
- Cradle-to-gate (product - as traded - at a central storage), incl. agriculture/extraction, processing and transports
- Not including downstream processing, use phase and disposal
- ESU database 2018 (based on ecoinvent v2.2) used as background data
- 5 so called footprint indicators

Key results

	Overall environmental footprint	Greenhouse gas footprint	Air pollution footprint	Eutrophication footprint	Material footprint
	Trillion UBP'13	Million tons CO2-eq	1000 tons PM10-eq	1000 tons N-eq	Billion RME
Commodities, energy sources	1'819	959	1'569	390	2'696
· crude oil	918	370	743	165	951
· diesel (Middle distillates)	269	141	232	47	256
· petrol (light distillates)	256	136	240	45	239
· natural gas	207	172	125	16	553
· coal	169	141	228	118	698
Commodities, ores and metals	905	130	841	121	2'899
· iron ore	91	16	251	14	1'285
· copper	424	16	388	40	664
· bauxite	2	0	5	1	68
· aluminium	90	71	109	24	99
· gold	299	28	88	42	782
Commodities, agricultural goods	1'023	167	500	757	126
· coffee	118	23	86	201	21
· cocoa	255	22	43	102	4
· cereals (wheat)	488	51	125	242	52
· sugar	34	7	31	37	13
· vegetable oils (palm oil)	88	44	168	144	23
· cotton	40	20	46	31	14
Total	3'747	1'257	2'911	1'268	5'721

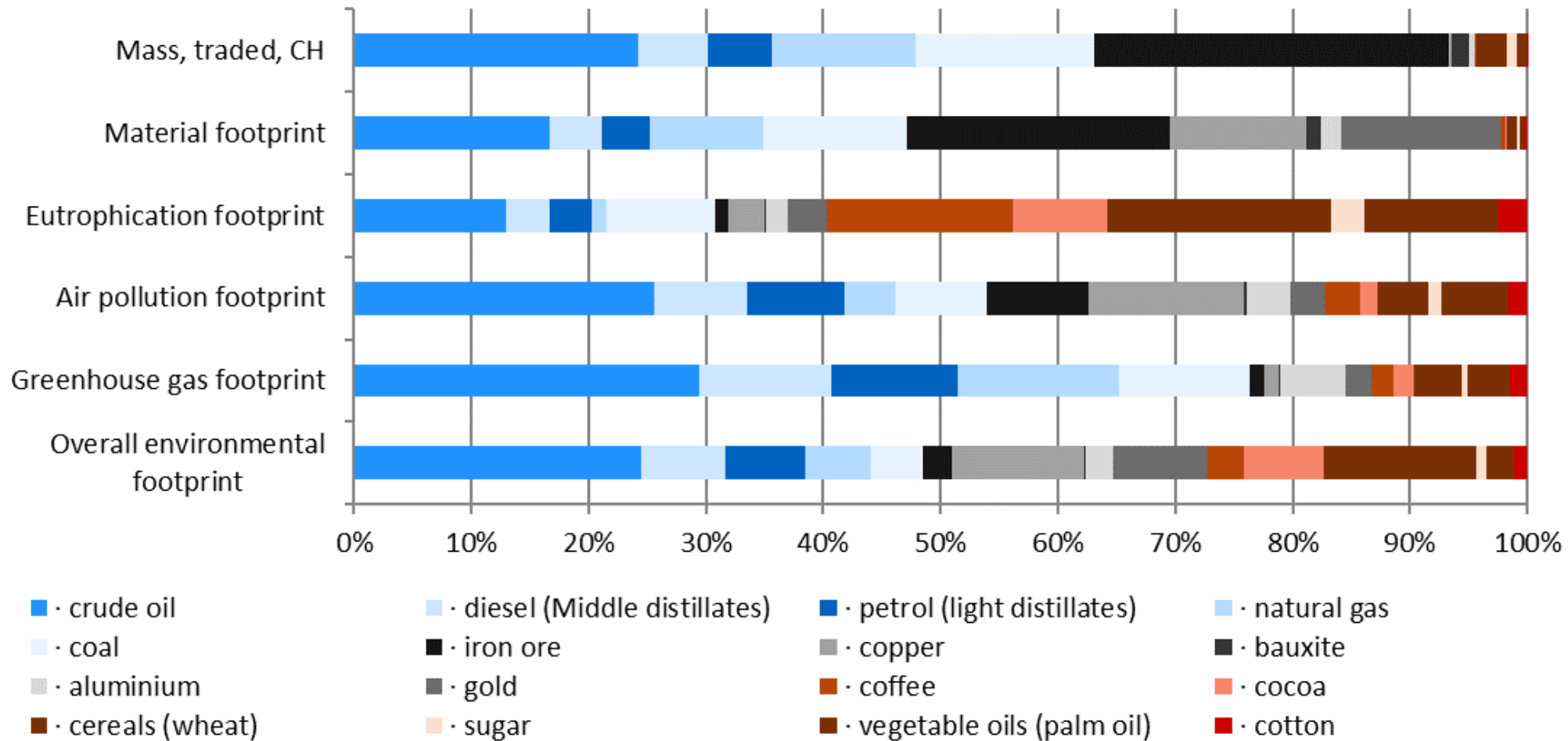
➤ For 3 out of 5 footprint indicators, impacts of crude oil production is most relevant for trading in Switzerland.

Comparison of environmental impacts from production of traded commodities and total consumption in Switzerland



➤ Environmental impacts of the production of traded commodities are 19 times higher than the impacts of Swiss final consumption

Share of different commodities for the total environmental impacts of traded commodities



➤ Share of commodities in total impacts depends on the indicator used

Summary

- A huge share of commodities traded globally goes through the “hands” of companies located in Switzerland without these goods physically entering the Swiss territory
- Environmental impacts of the production of this share are 19 times higher than the impacts caused by Swiss final consumption

➤ How can politics and traders deal with this responsibility?

Taking the challenge

- More transparency on the environmental impacts associated with the traded goods is necessary in international trade
- Information about primary production conditions needs to be passed along to new owners of goods
- Barriers for traders to pass this information along should be tackled
- The presently discussed Swiss “Konzernverantwortungsinitiative” tackles the political responsibility

Thank you very much for your attention!

Data and reports available on
www.esu-services.ch/projects/trade/

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Financing:

Federal Office for the
Environment (FOEN)

Note: The views expressed in this presentation are those of the authors and do not necessarily represent those of the FOEN

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