International Spillover Effects

Side-event to the High-Level Political Forum by GIZ on behalf of BMZ

Zach Wendling, Ph.D., *Project Manager*

Salma Dahir, *Economist*

05 July 2022

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Overview

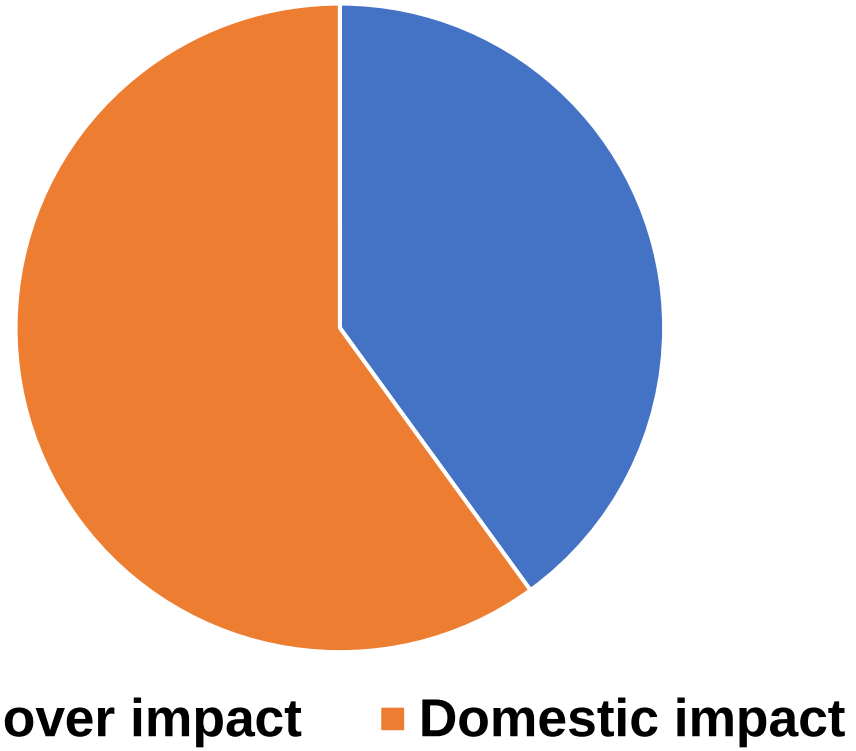
- International Spillover Effects
- Latest data
- Policy leverages

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Did you know?

Carbon Footprint

of the average inhabitant of the European Union



SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Measuring spillovers in the SDG Index

Environmental and social spillovers embodied into trade	International economic and financial flows	Peace keeping and security
Exports of hazardous pesticides	Official development assistance	Exports of major conventional weapons
Scarce water consumption embodied in imports	Corporate Tax Haven Score	
Fatal work-related accidents embodied in imports	Financial Secrecy Score	
SO_2 emissions embodied in imports	Shifted profits of multinationals	
Nitrogen emissions embodied in imports		
CO_2 emissions embodied in imports		
Marine biodiversity threats embodied in imports		
Terrestrial and freshwater biodiversity threats embodied in imports		

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Spillovers in the European Union

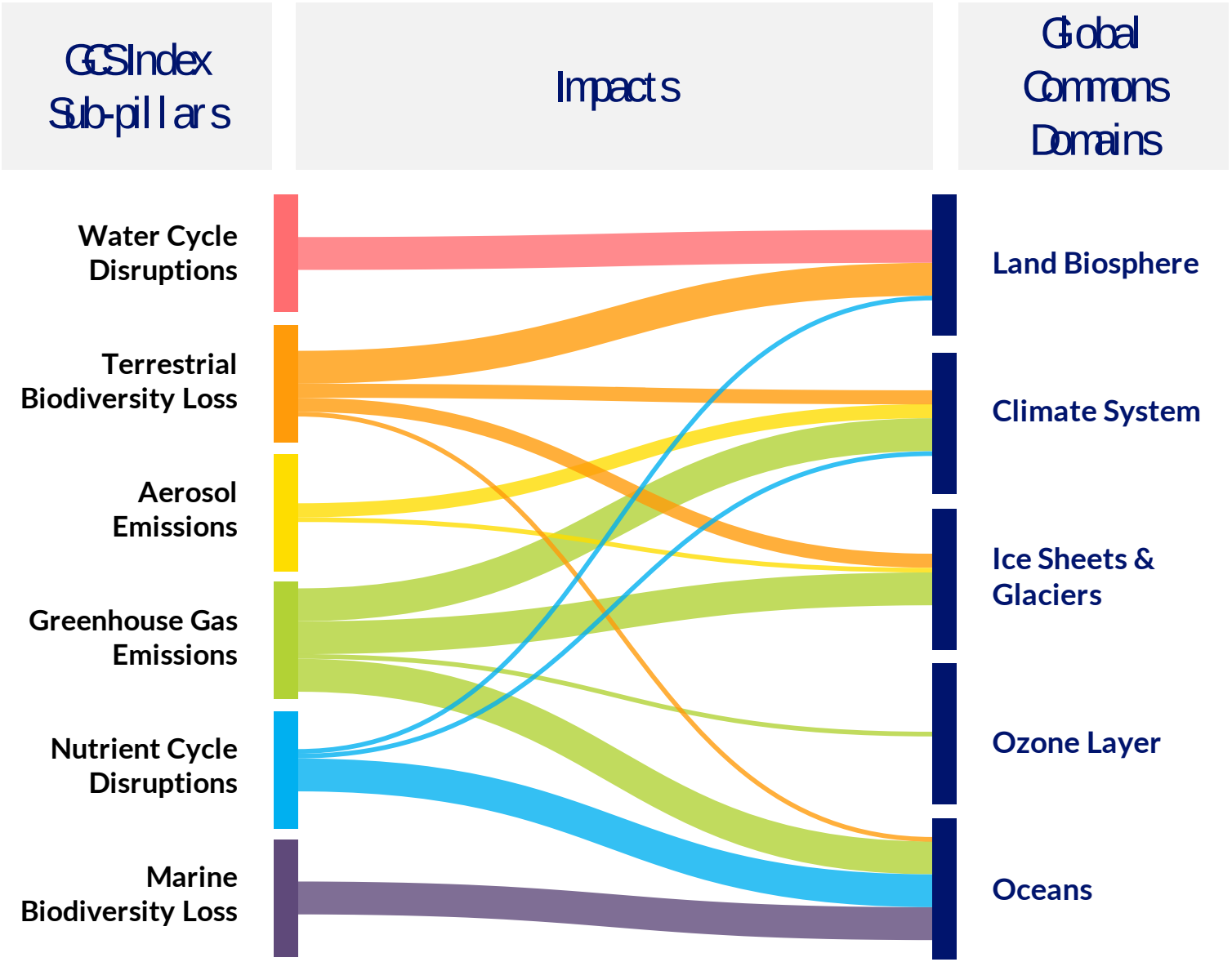
Textiles

Food Supply

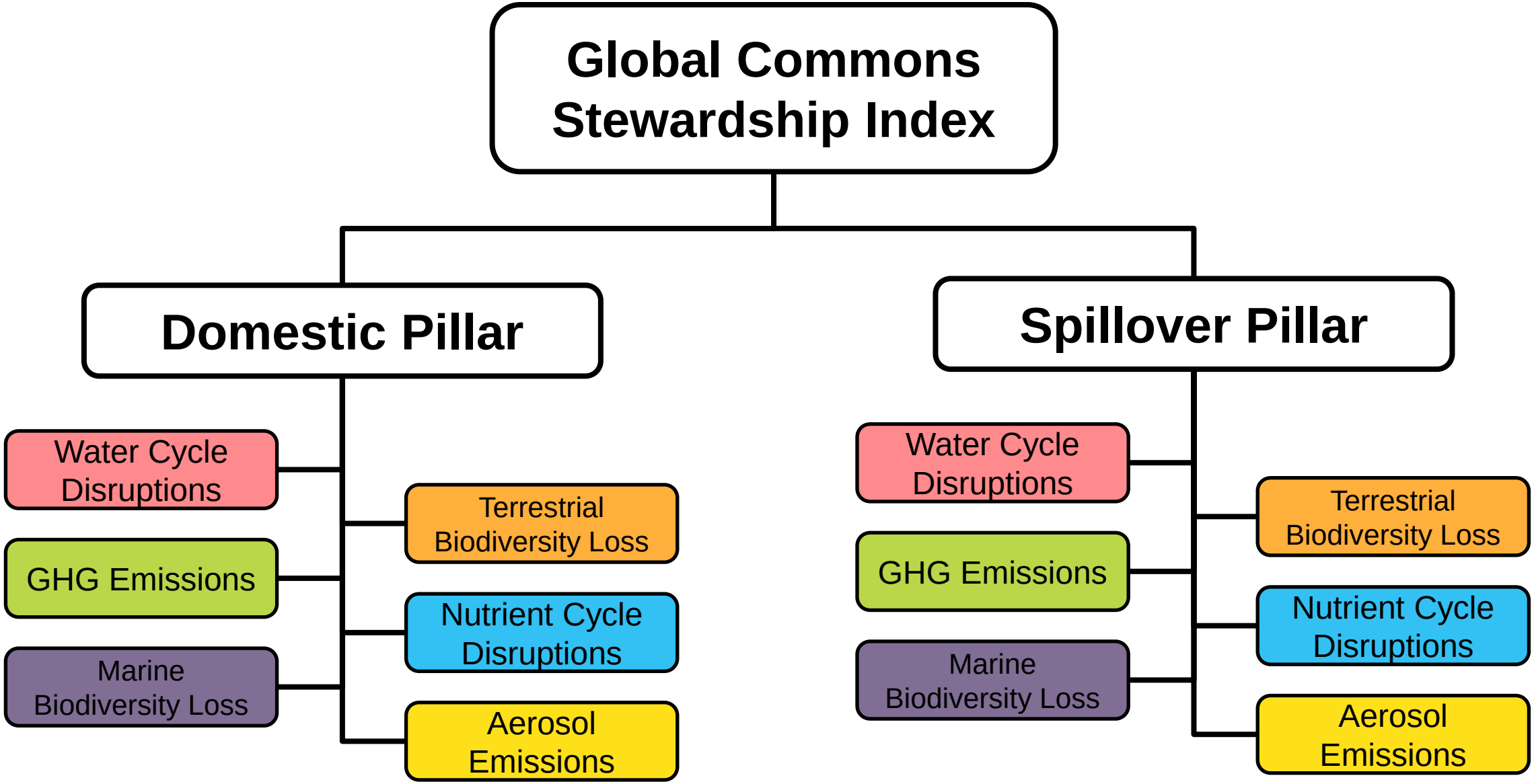
SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

- 99 countries + EU27
- 33 Indicators
- Trajectories
- 2 detailed features
  - Japan
  - EU27

Tracking impacts to the Global Commons



SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS



SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Example of Transboundary Spillover

Final consumer of tire in United States

Air pollution from tire production in Mexico

Biodiversity impacts from rubber production in Thailand

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

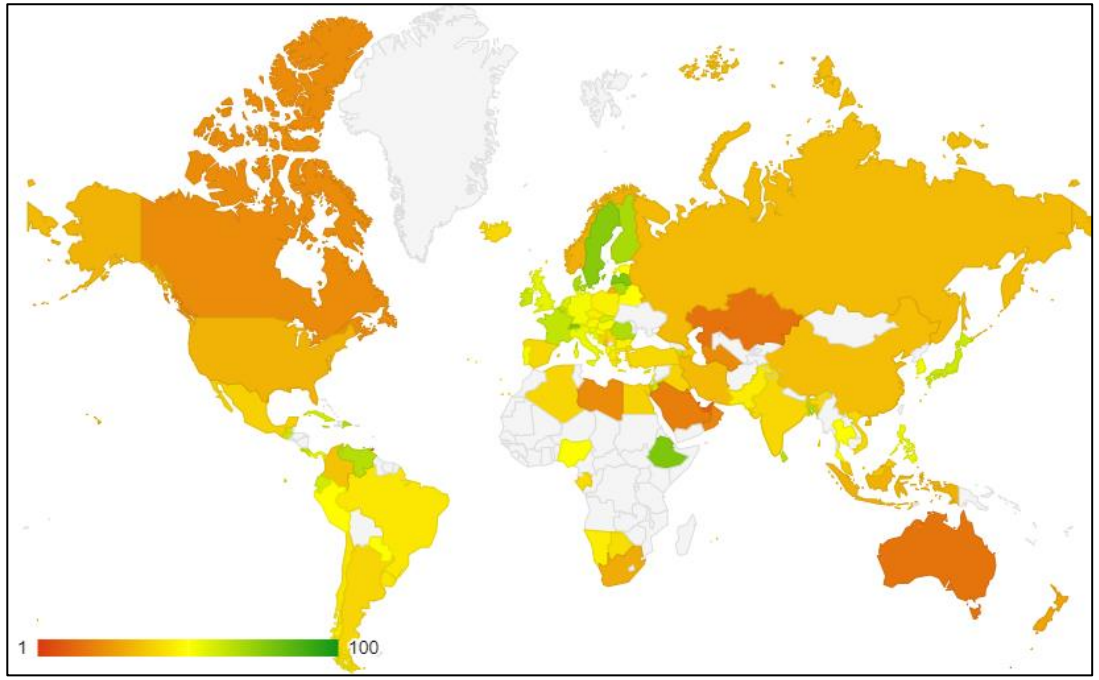
Objectives of the Global Commons Stewardship Index

1. Raise awareness and attention to *Global Commons*
2. Identify global trends and priorities
3. Motivate better national policies
    - National, Sub-national, Civil society
    - International/global
4. Highlight and help close data gaps

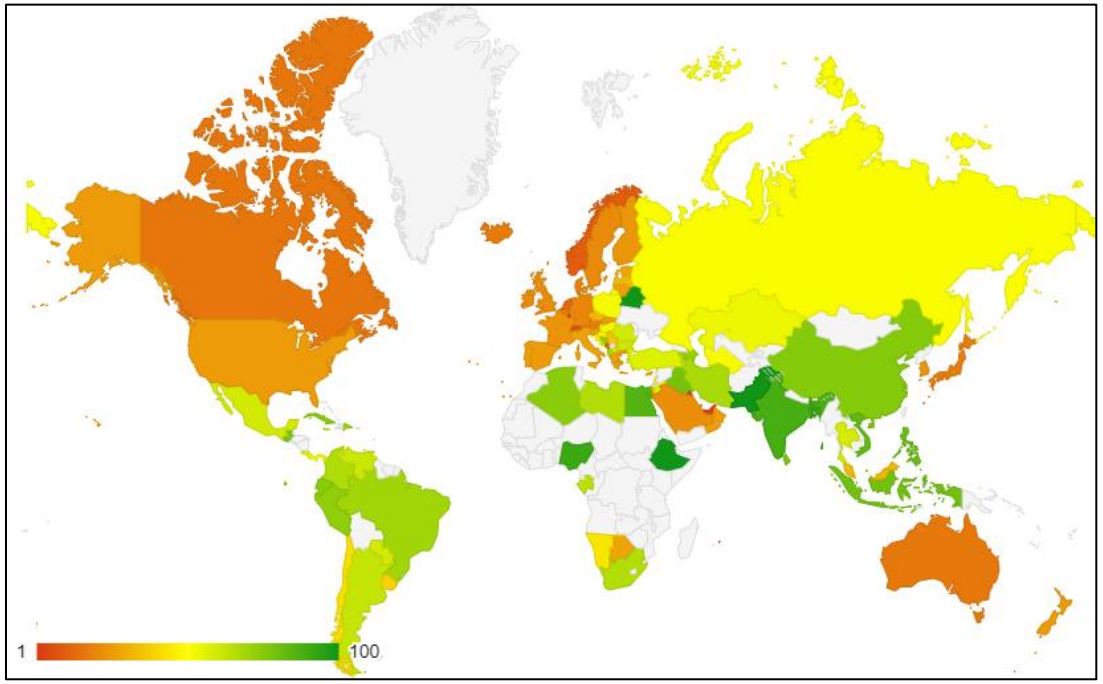
SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Contrasting scores & economic development

Domestic Pillar



Spillover Pillar



SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

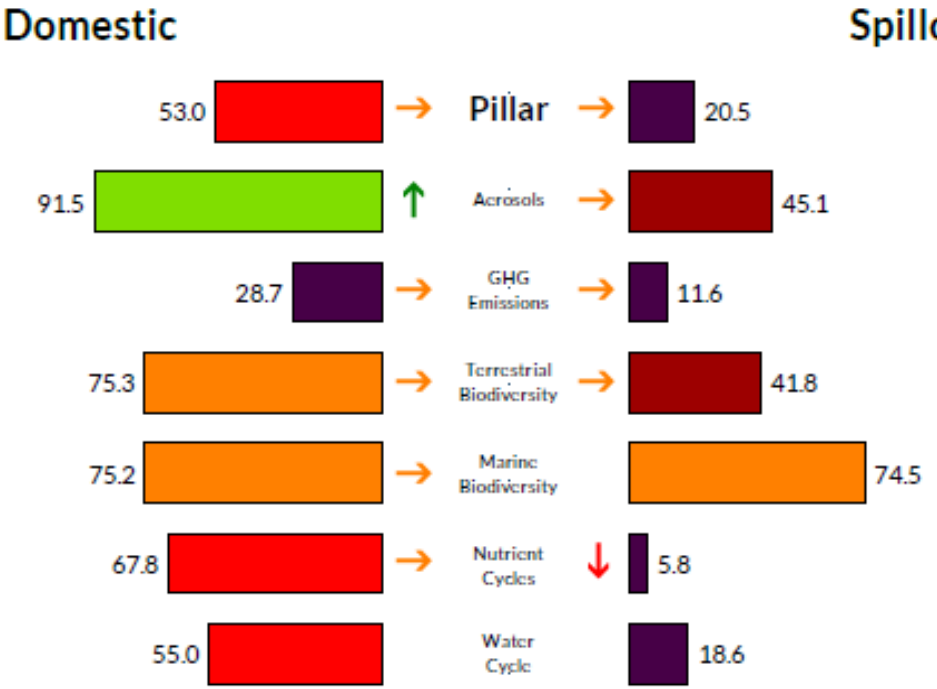
Germany

OECD

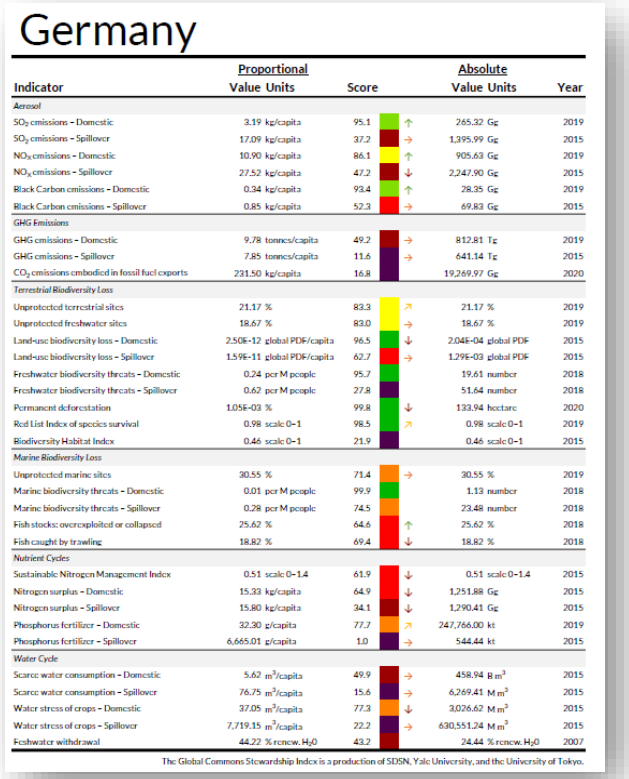
Population [millions]	83.2	GDP [$, billions]	4,240.0
Land area [km^2, thousands]	35,676.8	GDP per capita	50,937

Overall impact on the Global Commons and trajectory: **Very high** →

Impacts and trajectory by pillar and sub-pillar:



Individual country profiles



Germany

Indicator	Proportional Value	Units	Score		Absolute Value	Units	Year
Aerosol							
SO_2 emissions – Domestic	3.19	kg/capita	95.1	↑	265.32	Gg	2019
SO_2 emissions – Spillover	17.09	kg/capita	37.2	→	1,395.99	Gg	2015
NO_x emissions – Domestic	10.90	kg/capita	86.1	↑	905.63	Gg	2019
NO_x emissions – Spillover	27.52	kg/capita	47.2	↓	2,247.90	Gg	2015
Black Carbon emissions – Domestic	0.34	kg/capita	93.4	↑	28.35	Gg	2019
Black Carbon emissions – Spillover	0.85	kg/capita	52.3	→	69.83	Gg	2015
GHG Emissions							
GHG emissions – Domestic	9.78	tonnes/capita	49.2	→	812.81	Tg	2019
GHG emissions – Spillover	7.85	tonnes/capita	11.6	→	641.14	Tg	2015
CO_2 emissions embodied in fossil fuel exports	231.50	kg/capita	16.8		19,269.97	Gg	2020
Terrestrial Biodiversity Loss							
Unprotected terrestrial sites	21.17	%	83.3	↗	21.17	%	2019
Unprotected freshwater sites	18.67	%	83.0	→	18.67	%	2019
Land-use biodiversity loss – Domestic	2.50E-12	global PDF/capita	96.5	↓	2.04E-04	global PDF	2015
Land-use biodiversity loss – Spillover	1.59E-11	global PDF/capita	62.7	→	1.29E-03	global PDF	2015
Freshwater biodiversity threats – Domestic	0.24	per M people	95.7		19.61	number	2018
Freshwater biodiversity threats – Spillover	0.62	per M people	27.8		51.64	number	2018
Permanent deforestation	1.05E-03	%	99.8	↓	133.94	hectare	2020
Red List Index of species survival	0.98	scale 0–1	98.5	↗	0.98	scale 0–1	2019
Biodiversity Habitat Index	0.46	scale 0–1	21.9		0.46	scale 0–1	2015
Marine Biodiversity Loss							
Unprotected marine sites	30.55	%	71.4	→	30.55	%	2019
Marine biodiversity threats – Domestic	0.01	per M people	99.9		1.13	number	2018
Marine biodiversity threats – Spillover	0.28	per M people	74.5		23.48	number	2018
Fish stocks: overexploited or collapsed	25.62	%	64.6	↑	25.62	%	2018
Fish caught by trawling	18.82	%	69.4	↓	18.82	%	2018
Nutrient Cycles							
Sustainable Nitrogen Management Index	0.51	scale 0–1.4	61.9	↓	0.51	scale 0–1.4	2015
Nitrogen surplus – Domestic	15.33	kg/capita	64.9	↓	1,251.88	Gg	2015
Nitrogen surplus – Spillover	15.80	kg/capita	34.1	↓	1,290.41	Gg	2015
Phosphorus fertilizer – Domestic	32.30	g/capita	77.7	↗	247,766.00	kt	2019
Phosphorus fertilizer – Spillover	6,665.01	g/capita	1.0	→	544.44	kt	2015
Water Cycle							
Scarce water consumption – Domestic	5.62	m^3/capita	49.9	→	458.94	B m^3	2015
Scarce water consumption – Spillover	76.75	m^3/capita	15.6	→	6,269.41	M m^3	2015
Water stress of crops – Domestic	37.05	m^3/capita	77.3	↓	3,026.62	M m^3	2015
Water stress of crops – Spillover	7,719.15	m^3/capita	22.2	→	630,551.24	M m^3	2015
Freshwater withdrawal	44.22	% renew. H_2O	43.2		24.44	% renew. H_2O	2007

The Global Commons Stewardship Index is a production of SDSN, Yale University, and the University of Tokyo.

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Insights for Action

- Major transformations are urgently needed
- Rich countries drive most spillovers
- Decouple environmental impacts from development
- Persistent data gaps

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Policy Levers

Domestic

- Public procurement
- Carbon border adjustments
- Corporate reporting requirements
  - Disclosure
  - Due diligence

Policy Levers

Domestic

International

- Trade agreements
  - Existing
  - Future
- Technical cooperation
- Financing mechanisms

Policy Levers

Domestic

International

Data systems

- Investment in collection & reporting
  - Impacts
  - Trade data
- Timely
- Open source
- International organizations
- National statistics offices

Policy Levers

Domestic

International

Data systems

Policy coherence

International Spillovers

Side-event to the High-Level Political Forum by GIZ on behalf of BMZ

Thank you for your attention.

More about our work:

Sustainable Development Solutions Network

@UNSDSN

@UNSDSN

05 July 2022

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS