

**Supplementary Material for the Manuscript “*Debunking competition - Global Ecologically Unequal Exchange explained by exploitation and control relations*”**

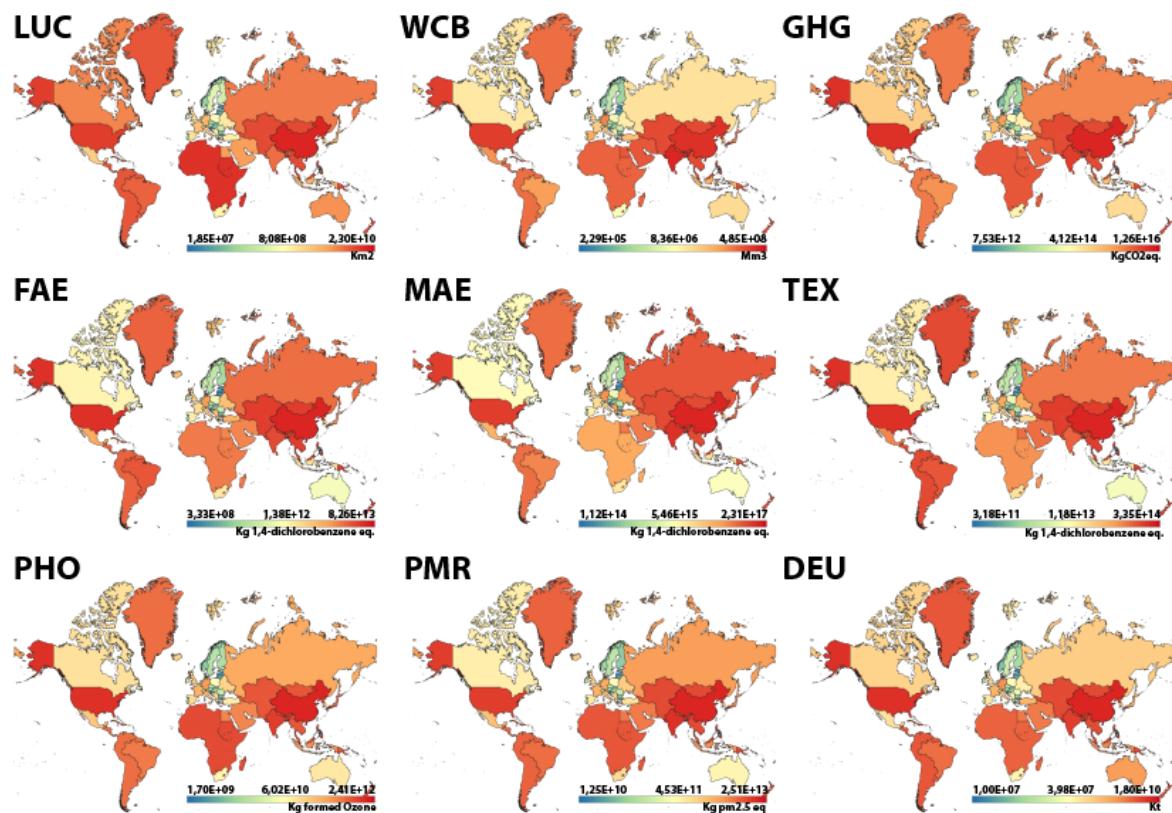
**Environmental variables and abbreviations.**

Category	Stressor & Unit
LUC	Cropland - Cereal grains nec, km2
	Cropland - Crops nec, km2
	Cropland - Fodder crops-Cattle, km2
	Cropland - Fodder crops-Meat animals nec, km2
	Cropland - Fodder crops-Pigs, km2
	Cropland - Fodder crops-Poultry, km2
	Cropland - Fodder crops-Raw milk, km2
	Cropland - Oil seeds, km2
	Cropland - Paddy rice, km2
	Cropland - Plant-based fibers, km2
	Cropland - Sugar cane, sugar beet, km2
	Cropland - Vegetables, fruit, nuts, km2
	Cropland - Wheat, km2
	Forest area - Forestry, km2
	Other land Use: Total, km2
	Permanent pastures - Grazing-Cattle, km2
	Permanent pastures - Grazing-Meat animals nec, km2
	Permanent pastures - Grazing-Raw milk, km2
	Infrastructure land, km2
	Forest area - Marginal use, km2
WCB	Water Consumption Blue - Total, Mm3
GHG	GHG emissions (GWP100)   Problem oriented approach: baseline (CML, 1999)   GWP100 (IPCC, 2007), O2 eq.
FAE	Freshwater aquatic ecotoxicity (FAETP inf)   Problem oriented approach: baseline (CML, 1999)   FAETP inf. (Huijbregts, 1999 & 2000), "kg 1,4-dichlorobenzene eq. "
MAE	Marine aquatic ecotoxicity (MAETP inf)   Problem oriented approach: baseline (CML, 1999)   MAETP inf. (Huijbregts, 1999 & 2000), "kg 1,4-dichlorobenzene eq. "
TEX	Terrestrial ecotoxicity (TETP inf)   Problem oriented approach: baseline (CML, 1999)   TETP inf.(Huijbregts, 1999 & 2000), "kg 1,4-dichlorobenzene eq. "

<b>PHO</b>	photochemical oxidation (MIR; very high NOx)   Problem oriented approach: non baseline (CML, 1999)   MIR 1997; very high NOx (Carter, 1994, 1997, 1998; Carter, Pierce, Luo & Malkina, 1995 ),kg formed ozone
<b>PMR</b>	Particulate matter/Respiratory inorganics midpoint   ILCD recommended CF   emission-weighted average PM2.5 equivalent, kg PM2.5-eq
<b>DEU</b>	Domestic Extraction Used - Crop and Crop Residue,kt
	Domestic Extraction Used - Grazing and Fodder,kt
	Domestic Extraction Used - Forestry and Timber,kt
	Domestic Extraction Used - Fisheries, kt
	Domestic Extraction Used - Non-metallic Minerals,kt
	Domestic Extraction Used - Iron Ore,kt
	Domestic Extraction Used - Non-ferrous metal ores,kt

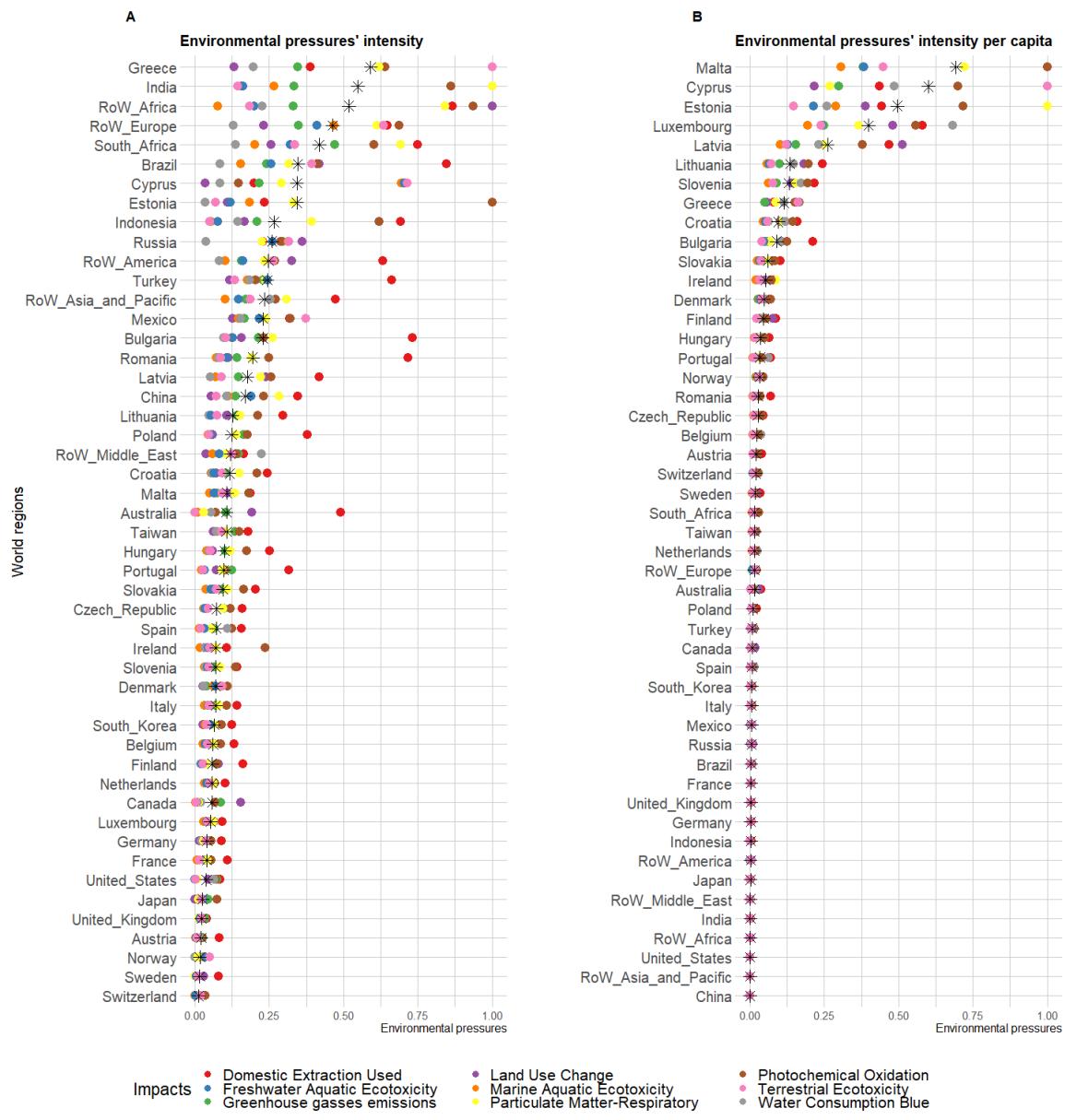
**Table 1. Environmental variables from EXIOBASE with abbreviations used in the text and units.**

## Global map with embedded environmental pressures



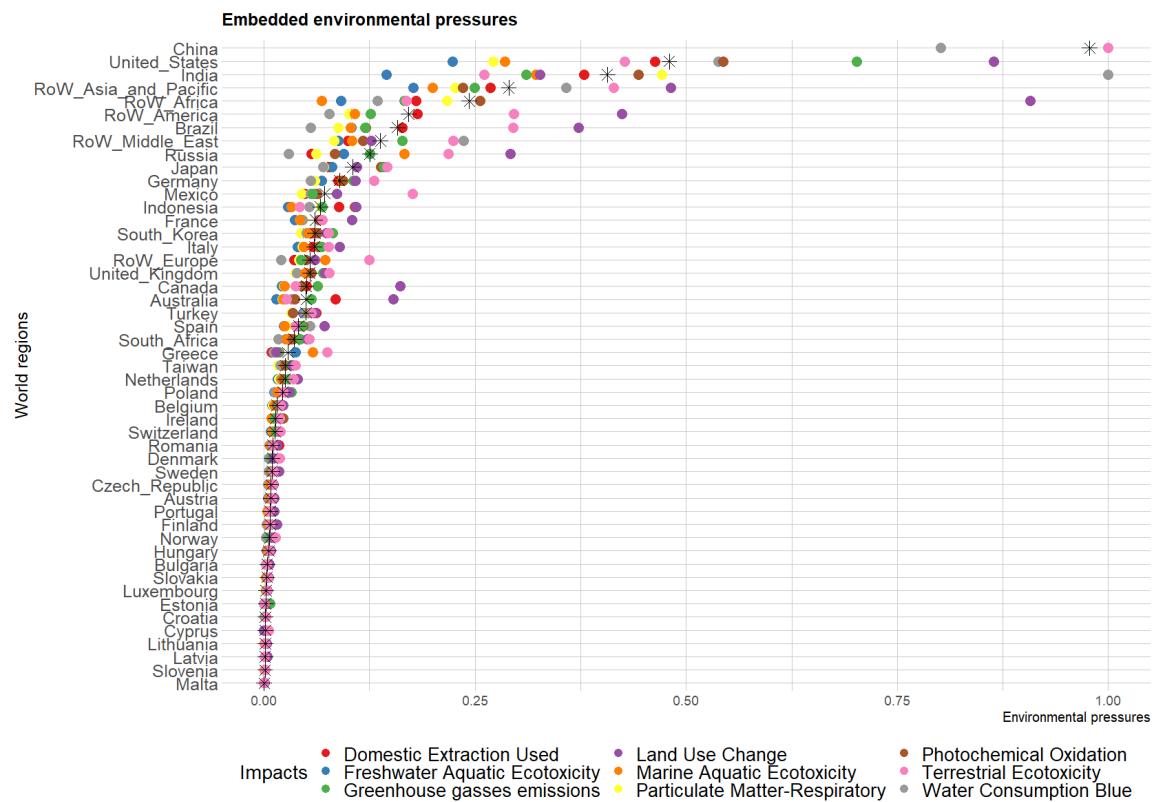
**Fig.1. Global ecological pressures embedded in economic production.** All values assess the amount of natural resources required, or the environmental impact produced, directly and indirectly, to generate the economic output. DEU = Domestic Extraction Used; GHG = Greenhouse gasses emissions; MAE = Marine Aquatic Ecotoxicity; PMR = Particulate Matter/Respiratory; WCB = Water Consumption Blue; FAE = Freshwater Aquatic Ecotoxicity; LUC = Land Use Change; PHO = Photochemical Oxidation; TEX = Terrestrial Ecotoxicity

## Environmental pressures' intensity and environmental pressures' intensity per capita.



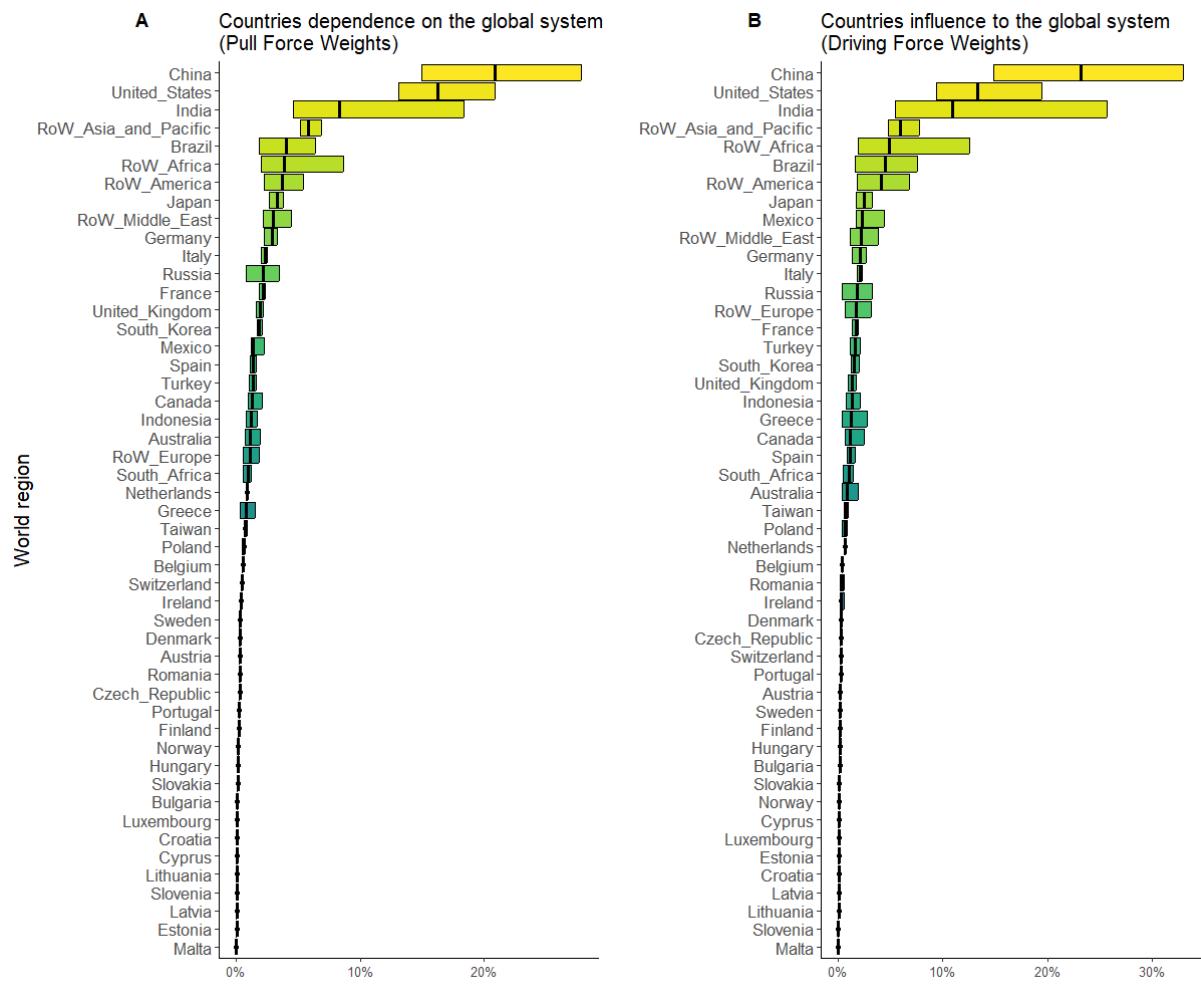
**Fig. 2. Global distribution of environmental pressures' intensity and environmental pressures' intensity per capita in 2022.** (a) Environmental pressures' intensity and (b) environmental pressures' intensity per capita of each world region. Each dot represents an environmental pressure, the star represents the average pressure for all indicators of each world region. The values presented are homogenized using min-max normalization to facilitate the visual comparison of indicators. Fig. 1 (main text) presents the raw values.

## Embedded environmental pressures



**Fig. 3. Global distribution of embedded environmental pressures in 2022.** Each dot represents an environmental pressure, the star represents the average pressure for all indicators of each world region. The values presented are homogenized using min-max normalization to facilitate the visual comparison of indicators. Supplementary Material Fig. 1 presents the raw values.

## Average pull and driving force weights per world region



**Fig. 4. Average pull and driving force weights per world region in 2022.** In Fig.4A and 4B, the box represents the minimum and maximum and the black line the average of PFW and DFW for all indicators. Full data of the PFW and DFW of each indicator for each world region is available in Supplementary Material Tables 4 and 5.

**Correlation analysis of PFW and DFW for all indicators between them, with economic output and economic output per capita.**

Parameter1	Parameter2	r	95% CI	t(47)	p
DEU	GHG	0.98	[ 0.97, 0.99]	35.48	< .001***
DEU	FAE	0.96	[ 0.93, 0.98]	23.35	< .001***
DEU	TEX	0.98	[ 0.96, 0.99]	32.55	< .001***
DEU	WCB	0.92	[ 0.86, 0.95]	15.67	< .001***
DEU	PMR	0.97	[ 0.95, 0.99]	29.68	< .001***
DEU	PHO	0.99	[ 0.99, 1.00]	61.38	< .001***
DEU	MAE	0.98	[ 0.96, 0.99]	31.17	< .001***
DEU	LUC	0.94	[ 0.90, 0.97]	19.37	< .001***
DEU	Economic_Output	0.96	[ 0.94, 0.98]	24.65	< .001***
DEU	EO_capita	-0.11	[ -0.38, 0.18]	-0.75	> .999
GHG	FAE	0.92	[ 0.87, 0.96]	16.46	< .001***
GHG	TEX	0.96	[ 0.93, 0.98]	24.41	< .001***
GHG	WCB	0.90	[ 0.83, 0.94]	14.07	< .001***
GHG	PMR	0.93	[ 0.88, 0.96]	17.32	< .001***
GHG	PHO	0.99	[ 0.98, 0.99]	44.52	< .001***
GHG	MAE	0.95	[ 0.91, 0.97]	20.09	< .001***
GHG	LUC	0.95	[ 0.91, 0.97]	21.08	< .001***
GHG	Economic_Output	0.99	[ 0.98, 0.99]	44.67	< .001***
GHG	EO_capita	-0.06	[ -0.33, 0.23]	-0.40	> .999
FAE	TEX	0.96	[ 0.92, 0.98]	22.63	< .001***
FAE	WCB	0.82	[ 0.70, 0.89]	9.79	< .001***
FAE	PMR	0.97	[ 0.94, 0.98]	25.64	< .001***
FAE	PHO	0.94	[ 0.90, 0.97]	19.43	< .001***
FAE	MAE	0.99	[ 0.98, 0.99]	44.50	< .001***
FAE	LUC	0.86	[ 0.76, 0.92]	11.54	< .001***
FAE	Economic_Output	0.93	[ 0.88, 0.96]	17.38	< .001***
FAE	EO_capita	-0.12	[ -0.39, 0.16]	-0.85	> .999
TEX	WCB	0.86	[ 0.76, 0.92]	11.54	< .001***
TEX	PMR	0.94	[ 0.90, 0.97]	19.32	< .001***
TEX	PHO	0.97	[ 0.94, 0.98]	25.95	< .001***
TEX	MAE	0.97	[ 0.94, 0.98]	26.30	< .001***
TEX	LUC	0.94	[ 0.89, 0.97]	18.82	< .001***
TEX	Economic_Output	0.95	[ 0.91, 0.97]	20.10	< .001***
TEX	EO_capita	-0.15	[ -0.41, 0.14]	-1.01	> .999
WCB	PMR	0.92	[ 0.87, 0.96]	16.64	< .001***
WCB	PHO	0.93	[ 0.88, 0.96]	17.68	< .001***

WCB	MAE	0.89	[ 0.81, 0.93]	13.17	< .001***
WCB	LUC	0.83	[ 0.72, 0.90]	10.38	< .001***
WCB	Economic_Output	0.85	[ 0.75, 0.91]	11.04	< .001***
WCB	EO_capita	-0.12	[-0.39, 0.16]	-0.85	> .999
PMR	PHO	0.97	[ 0.95, 0.98]	27.75	< .001***
PMR	MAE	0.98	[ 0.97, 0.99]	37.55	< .001***
PMR	LUC	0.88	[ 0.79, 0.93]	12.64	< .001***
PMR	Economic_Output	0.91	[ 0.84, 0.95]	15.00	< .001***
PMR	EO_capita	-0.15	[-0.41, 0.14]	-1.05	> .999
PHO	MAE	0.97	[ 0.94, 0.98]	26.64	< .001***
PHO	LUC	0.95	[ 0.91, 0.97]	20.24	< .001***
PHO	Economic_Output	0.97	[ 0.95, 0.98]	26.82	< .001***
PHO	EO_capita	-0.10	[-0.37, 0.19]	-0.68	> .999
MAE	LUC	0.88	[ 0.79, 0.93]	12.45	< .001***
MAE	Economic_Output	0.94	[ 0.90, 0.97]	18.98	< .001***
MAE	EO_capita	-0.13	[-0.40, 0.16]	-0.90	> .999
LUC	Economic_Output	0.92	[ 0.86, 0.95]	15.85	< .001***
LUC	EO_capita	-0.11	[-0.38, 0.17]	-0.77	> .999
Economic_Output	EO_capita	-6.48e-03	[-0.29, 0.28]	-0.04	> .999

p-value adjustment method: Holm (1979)

Observations: 49

**Table 2. Correlation of PFW for all indicators between them, with economic output and economic output per capita.**

Parameter1	Parameter2	r	95% CI	t(47)	p
DEU	GHG	0.97	[ 0.94, 0.98]	26.78	< .001***
DEU	FAE	0.94	[ 0.90, 0.97]	18.86	< .001***
DEU	TEX	0.95	[ 0.91, 0.97]	20.28	< .001***
DEU	WCB	0.86	[ 0.76, 0.92]	11.44	< .001***
DEU	PMR	0.97	[ 0.94, 0.98]	25.97	< .001***
DEU	PHO	0.99	[ 0.98, 0.99]	44.78	< .001***
DEU	MAE	0.96	[ 0.94, 0.98]	24.60	< .001***
DEU	LUC	0.88	[ 0.79, 0.93]	12.66	< .001***
DEU	Economic_Output	0.91	[ 0.85, 0.95]	15.10	< .001***
DEU	EO_capita	-0.16	[-0.42, 0.13]	-1.12	> .999
GHG	FAE	0.89	[ 0.81, 0.94]	13.36	< .001***
GHG	TEX	0.91	[ 0.84, 0.95]	14.87	< .001***
GHG	WCB	0.83	[ 0.71, 0.90]	10.09	< .001***
GHG	PMR	0.90	[ 0.83, 0.94]	14.19	< .001***
GHG	PHO	0.98	[ 0.96, 0.99]	32.73	< .001***
GHG	MAE	0.92	[ 0.86, 0.95]	15.74	< .001***

GHG	LUC	0.88	[ 0.80, 0.93]	12.74	< .001***
GHG	Economic_Output	0.98	[ 0.96, 0.99]	30.62	< .001***
GHG	EO_capita	-0.10	[ -0.37, 0.19]	-0.67	> .999
FAE	TEX	0.93	[ 0.88, 0.96]	17.75	< .001***
FAE	WCB	0.70	[ 0.52, 0.82]	6.76	< .001***
FAE	PMR	0.94	[ 0.90, 0.97]	19.11	< .001***
FAE	PHO	0.91	[ 0.85, 0.95]	15.32	< .001***
FAE	MAE	0.98	[ 0.97, 0.99]	34.48	< .001***
FAE	LUC	0.76	[ 0.61, 0.86]	08.02	< .001***
FAE	Economic_Output	0.85	[ 0.75, 0.91]	11.15	< .001***
FAE	EO_capita	-0.16	[ -0.42, 0.12]	-1.13	> .999
TEX	WCB	0.75	[ 0.59, 0.85]	7.73	< .001***
TEX	PMR	0.90	[ 0.84, 0.95]	14.58	< .001***
TEX	PHO	0.92	[ 0.86, 0.95]	16.14	< .001***
TEX	MAE	0.94	[ 0.90, 0.97]	19.04	< .001***
TEX	LUC	0.86	[ 0.76, 0.92]	11.56	< .001***
TEX	Economic_Output	0.85	[ 0.75, 0.92]	11.24	< .001***
TEX	EO_capita	-0.24	[ -0.48, 0.05]	-1.66	> .999
WCB	PMR	0.88	[ 0.80, 0.93]	12.68	< .001***
WCB	PHO	0.88	[ 0.80, 0.93]	12.99	< .001***
WCB	MAE	0.81	[ 0.69, 0.89]	9.51	< .001***
WCB	LUC	0.70	[ 0.53, 0.82]	6.79	< .001***
WCB	Economic_Output	0.73	[ 0.56, 0.84]	7.22	< .001***
WCB	EO_capita	-0.16	[ -0.43, 0.12]	-1.14	> .999
PMR	PHO	0.96	[ 0.94, 0.98]	24.55	< .001***
PMR	MAE	0.97	[ 0.95, 0.98]	28.83	< .001***
PMR	LUC	0.80	[ 0.67, 0.88]	9.19	< .001***
PMR	Economic_Output	0.82	[ 0.70, 0.89]	9.71	< .001***
PMR	EO_capita	-0.20	[ -0.45, 0.09]	-1.38	> .999
PHO	MAE	0.95	[ 0.91, 0.97]	20.66	< .001***
PHO	LUC	0.89	[ 0.80, 0.93]	13.04	< .001***
PHO	Economic_Output	0.92	[ 0.87, 0.96]	16.42	< .001***
PHO	EO_capita	-0.15	[ -0.41, 0.14]	-1.01	> .999
MAE	LUC	0.77	[ 0.62, 0.86]	8.23	< .001***
MAE	Economic_Output	0.86	[ 0.77, 0.92]	11.61	< .001***
MAE	EO_capita	-0.18	[ -0.44, 0.11]	-1.25	> .999
LUC	Economic_Output	0.83	[ 0.71, 0.90]	10.02	< .001***
LUC	EO_capita	-0.19	[ -0.44, 0.10]	-1.29	> .999
Economic_Output	EO_capita	-6.48e-03	[ -0.29, 0.28]	-0.04	> .999

p-value adjustment method: Holm (1979)

Observations: 49

**Table 3. Correlation of DFW for all indicators between them, with economic output and economic output per capita.**

**Tables of PFW and DFW for each indicator of each world region.**

Countries	Economic Output	LUC	WCB	GHG	FAE	MAE	TEX	PHO	PMR	DEU
AT	0,477%	0,296%	0,246%	0,325%	0,290%	0,303%	0,319%	0,313%	0,284%	0,325%
BE	0,593%	0,528%	0,498%	0,539%	0,511%	0,532%	0,575%	0,524%	0,500%	0,518%
BG	0,078%	0,115%	0,091%	0,113%	0,118%	0,135%	0,124%	0,104%	0,111%	0,135%
CY	0,022%	0,016%	0,026%	0,034%	0,104%	0,127%	0,114%	0,023%	0,034%	0,022%
CZ	0,327%	0,276%	0,230%	0,304%	0,280%	0,298%	0,307%	0,289%	0,279%	0,281%
DE	4,016%	2,644%	2,252%	3,043%	3,036%	3,275%	3,277%	2,917%	2,629%	2,881%
DK	0,366%	0,282%	0,242%	0,286%	0,332%	0,359%	0,392%	0,311%	0,294%	0,283%
EE	0,036%	0,036%	0,024%	0,091%	0,035%	0,048%	0,034%	0,066%	0,040%	0,031%
ES	1,467%	1,536%	1,619%	1,397%	1,259%	1,166%	1,226%	1,500%	1,271%	1,418%
FI	0,293%	0,272%	0,148%	0,262%	0,215%	0,253%	0,241%	0,231%	0,198%	0,233%
FR	2,810%	2,384%	1,892%	2,221%	2,055%	2,054%	2,208%	2,252%	2,134%	2,255%
GR	0,196%	0,355%	0,413%	0,479%	1,271%	1,576%	1,371%	0,520%	0,570%	0,355%
HR	0,061%	0,058%	0,050%	0,061%	0,059%	0,064%	0,072%	0,066%	0,061%	0,061%
HU	0,193%	0,173%	0,149%	0,184%	0,178%	0,193%	0,197%	0,185%	0,174%	0,182%
IE	0,522%	0,367%	0,333%	0,392%	0,379%	0,367%	0,414%	0,458%	0,358%	0,370%
IT	2,168%	2,410%	2,057%	2,353%	2,322%	2,418%	2,544%	2,361%	2,253%	2,238%
LT	0,052%	0,058%	0,039%	0,058%	0,050%	0,055%	0,060%	0,057%	0,053%	0,055%
LU	0,117%	0,110%	0,101%	0,102%	0,102%	0,106%	0,115%	0,100%	0,100%	0,098%
LV	0,037%	0,064%	0,033%	0,045%	0,042%	0,043%	0,047%	0,048%	0,047%	0,048%
MT	0,018%	0,031%	0,020%	0,019%	0,021%	0,020%	0,026%	0,023%	0,022%	0,020%
NL	0,953%	0,934%	0,803%	0,882%	0,856%	0,906%	0,984%	0,810%	0,814%	0,803%
PL	0,647%	0,634%	0,494%	0,764%	0,641%	0,693%	0,680%	0,674%	0,646%	0,761%
PT	0,250%	0,272%	0,278%	0,300%	0,235%	0,238%	0,245%	0,258%	0,251%	0,318%
RO	0,230%	0,270%	0,220%	0,274%	0,292%	0,302%	0,302%	0,284%	0,274%	0,388%
SE	0,559%	0,356%	0,241%	0,330%	0,312%	0,336%	0,346%	0,318%	0,291%	0,351%
SI	0,062%	0,051%	0,045%	0,053%	0,053%	0,056%	0,059%	0,057%	0,052%	0,051%
SK	0,127%	0,123%	0,103%	0,123%	0,121%	0,128%	0,137%	0,124%	0,118%	0,119%
GB	2,866%	1,784%	1,617%	2,185%	1,982%	2,093%	2,177%	1,976%	1,775%	1,881%
US	21,600%	18,211%	18,060%	20,918%	13,140%	13,516%	14,172%	17,971%	13,311%	16,958%
JP	5,385%	2,676%	2,819%	3,833%	3,513%	3,800%	3,663%	3,824%	2,907%	2,805%
CN	22,139%	14,953%	17,678%	19,555%	27,875%	23,955%	18,178%	20,218%	24,395%	21,137%
CA	1,828%	2,080%	0,999%	1,597%	1,047%	1,027%	1,087%	1,316%	1,015%	1,420%
KR	2,297%	1,667%	1,768%	2,086%	1,932%	1,923%	1,968%	1,847%	1,712%	1,801%
BR	1,810%	5,931%	1,858%	3,299%	4,256%	3,589%	6,358%	3,464%	3,236%	4,705%

Countries	Economic Output	LUC	WCB	GHG	FAE	MAE	TEX	PHO	PMR	DEU
IN	3,638%	4,627%	18,373%	6,176%	4,945%	7,887%	4,967%	8,616%	11,280%	7,890%
MX	1,132%	1,189%	1,249%	1,287%	1,516%	1,423%	2,236%	1,326%	1,187%	1,179%
RU	1,624%	2,944%	0,838%	2,207%	2,567%	3,492%	3,110%	1,704%	1,637%	1,319%
AU	1,456%	1,948%	0,962%	1,293%	0,707%	0,842%	0,751%	0,990%	0,832%	1,921%
CH	0,802%	0,478%	0,425%	0,482%	0,464%	0,478%	0,565%	0,531%	0,465%	0,464%
TR	0,844%	1,103%	1,276%	1,320%	1,651%	1,643%	1,311%	1,054%	1,180%	1,536%
TW	0,729%	0,749%	0,678%	0,807%	0,772%	0,801%	0,856%	0,731%	0,681%	0,715%
NO	0,383%	0,184%	0,126%	0,189%	0,223%	0,233%	0,260%	0,191%	0,178%	0,171%
ID	1,166%	1,187%	1,124%	1,188%	0,903%	0,872%	0,837%	1,737%	1,487%	1,568%
ZA	0,386%	0,870%	0,558%	1,077%	1,046%	0,907%	1,156%	0,943%	1,186%	0,899%
WA	4,735%	5,647%	6,886%	5,206%	5,636%	5,476%	6,375%	5,210%	5,941%	5,753%
WL	2,567%	5,423%	2,226%	3,088%	3,673%	3,301%	5,308%	3,184%	3,155%	4,356%
WE	0,498%	0,862%	0,550%	0,921%	1,269%	1,694%	1,841%	1,015%	1,057%	0,828%
WF	1,960%	8,689%	2,832%	3,086%	2,799%	2,032%	2,833%	4,561%	4,902%	3,557%
WM	3,475%	2,148%	4,451%	3,165%	2,915%	2,968%	3,572%	2,717%	2,623%	2,533%

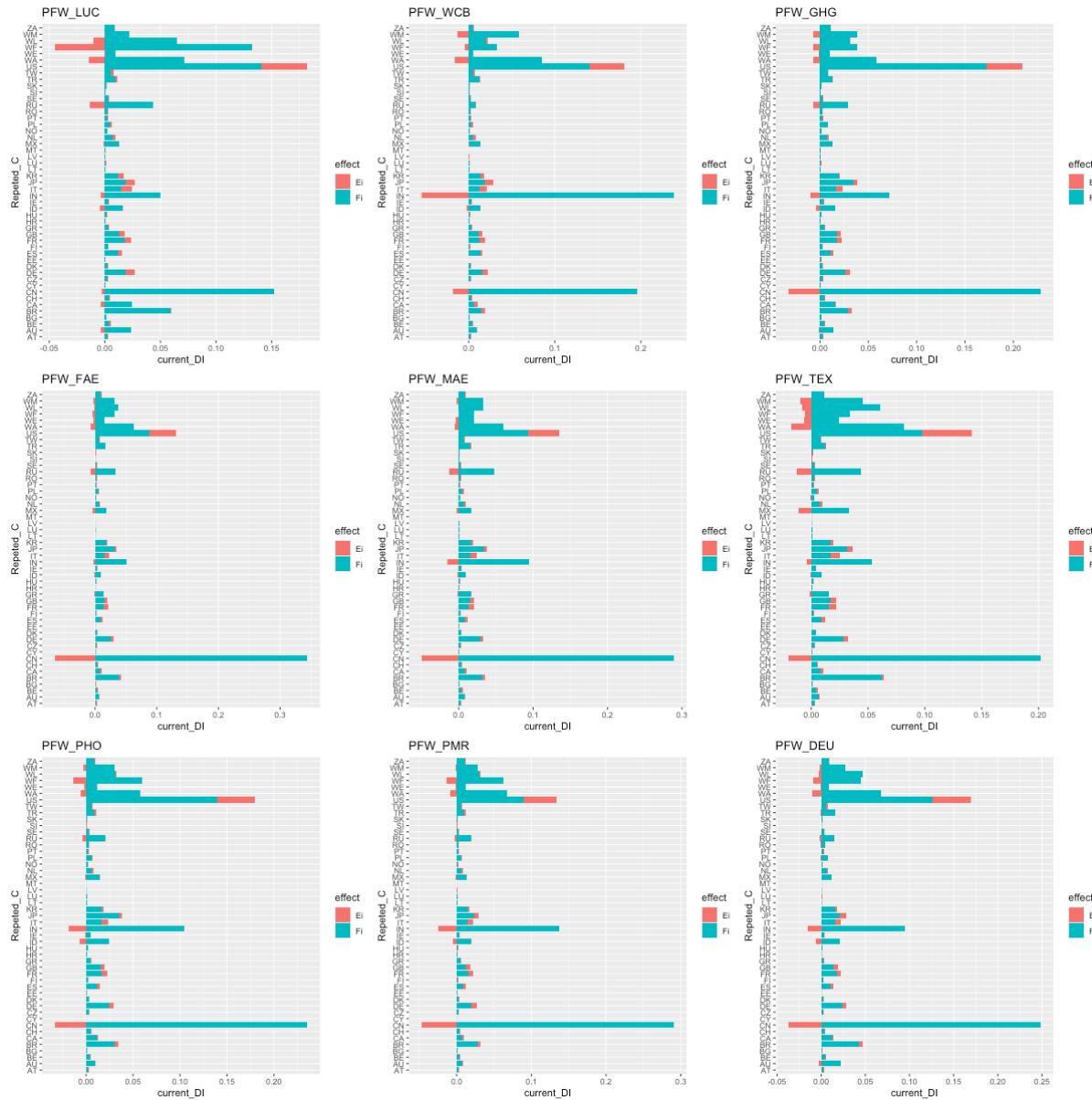
Table. 4. Percentage of Pull Force Weights (PFW) for each environmental pressure and Economic Output per world region in 2022.

Countries	Economic Output	LUC	WCB	GHG	FAEr	MAE	TEX	PHO_	PMR	DEU
AT	0,477%	0,182%	0,138%	0,234%	0,173%	0,179%	0,188%	0,214%	0,176%	0,240%
BE	0,593%	0,369%	0,380%	0,446%	0,380%	0,401%	0,446%	0,410%	0,366%	0,408%
BG	0,078%	0,143%	0,095%	0,143%	0,123%	0,149%	0,119%	0,114%	0,133%	0,196%
CY	0,022%	0,013%	0,025%	0,036%	0,125%	0,154%	0,139%	0,022%	0,036%	0,021%
CZ	0,327%	0,235%	0,175%	0,318%	0,236%	0,254%	0,276%	0,283%	0,268%	0,267%
DE	4,016%	1,644%	1,320%	2,374%	2,359%	2,687%	2,585%	2,196%	1,767%	2,131%
DK	0,366%	0,196%	0,161%	0,222%	0,306%	0,342%	0,392%	0,273%	0,250%	0,224%
EE	0,036%	0,035%	0,016%	0,163%	0,037%	0,063%	0,029%	0,108%	0,051%	0,029%
ES	1,467%	1,242%	1,615%	1,182%	0,965%	0,828%	0,834%	1,309%	0,956%	1,191%
FI	0,293%	0,247%	0,081%	0,220%	0,148%	0,187%	0,171%	0,179%	0,134%	0,196%
FR	2,810%	1,863%	1,359%	1,848%	1,536%	1,503%	1,646%	1,832%	1,667%	1,913%
GR	0,196%	0,388%	0,524%	0,647%	2,158%	2,744%	2,377%	0,722%	0,816%	0,400%
HR	0,061%	0,049%	0,041%	0,055%	0,047%	0,049%	0,060%	0,062%	0,054%	0,056%
HU	0,193%	0,163%	0,122%	0,189%	0,154%	0,164%	0,169%	0,196%	0,170%	0,193%
IE	0,522%	0,262%	0,222%	0,303%	0,321%	0,261%	0,362%	0,553%	0,296%	0,295%
IT	2,168%	2,078%	1,771%	2,234%	2,085%	2,143%	2,289%	2,209%	2,019%	2,038%
LT	0,052%	0,048%	0,026%	0,050%	0,034%	0,037%	0,043%	0,048%	0,042%	0,049%
LU	0,117%	0,065%	0,061%	0,060%	0,062%	0,063%	0,070%	0,057%	0,059%	0,055%

Countries	Economic Output	LUC	WCB	GHG	FAEr	MAE	TEX	PHO_	PMR	DEU
LV	0,037%	0,088%	0,028%	0,048%	0,043%	0,043%	0,048%	0,054%	0,054%	0,057%
MT	0,018%	0,030%	0,016%	0,016%	0,017%	0,016%	0,024%	0,021%	0,020%	0,017%
NL	0,953%	0,666%	0,570%	0,711%	0,636%	0,685%	0,763%	0,577%	0,578%	0,568%
PL	0,647%	0,576%	0,398%	0,869%	0,555%	0,601%	0,563%	0,687%	0,645%	0,887%
PT	0,250%	0,231%	0,277%	0,315%	0,191%	0,194%	0,188%	0,224%	0,220%	0,342%
RO	0,230%	0,321%	0,228%	0,320%	0,329%	0,321%	0,318%	0,340%	0,318%	0,566%
SE	0,559%	0,233%	0,113%	0,197%	0,175%	0,195%	0,197%	0,182%	0,157%	0,240%
SI	0,062%	0,033%	0,027%	0,038%	0,034%	0,035%	0,039%	0,045%	0,037%	0,037%
SK	0,127%	0,123%	0,094%	0,127%	0,115%	0,115%	0,144%	0,135%	0,119%	0,123%
GB	2,866%	1,088%	0,954%	1,671%	1,395%	1,514%	1,576%	1,381%	1,147%	1,269%
US	21,600%	15,441%	15,944%	19,415%	9,370%	9,971%	9,798%	15,623%	9,861%	14,149%
JP	5,385%	1,718%	1,745%	3,222%	2,700%	3,124%	2,926%	3,224%	1,990%	1,860%
CN	22,139%	14,869%	18,328%	21,738%	33,018%	27,683%	19,281%	22,435%	27,858%	23,640%
CA	1,828%	2,475%	0,625%	1,527%	0,802%	0,766%	0,799%	1,136%	0,770%	1,341%
KR	2,297%	1,269%	1,315%	2,002%	1,577%	1,599%	1,685%	1,575%	1,273%	1,475%
BR	1,810%	7,126%	1,621%	3,511%	4,680%	3,844%	7,563%	3,705%	3,360%	5,318%
IN	3,638%	5,483%	25,739%	7,857%	5,891%	10,330%	5,925%	11,381%	15,129%	10,322%
MX	1,132%	1,781%	1,947%	1,910%	2,688%	2,481%	4,415%	2,112%	1,908%	1,732%
RU	1,624%	2,821%	0,367%	1,841%	2,177%	3,281%	2,816%	1,238%	1,133%	0,815%
AU	1,456%	1,883%	0,538%	0,990%	0,330%	0,458%	0,368%	0,626%	0,434%	1,728%
CH	0,802%	0,224%	0,193%	0,243%	0,229%	0,234%	0,328%	0,316%	0,243%	0,232%
TR	0,844%	1,189%	1,519%	1,608%	2,130%	2,083%	1,486%	1,116%	1,325%	1,983%
TW	0,729%	0,664%	0,541%	0,891%	0,827%	0,877%	0,914%	0,716%	0,601%	0,660%
NO	0,383%	0,094%	0,044%	0,100%	0,148%	0,155%	0,186%	0,105%	0,095%	0,083%
ID	1,166%	1,356%	1,106%	1,317%	0,855%	0,811%	0,753%	2,093%	1,672%	1,843%
ZA	0,386%	0,928%	0,477%	1,299%	1,241%	1,038%	1,426%	1,049%	1,370%	1,006%
WA	4,735%	6,399%	7,725%	4,963%	5,462%	5,132%	7,391%	4,814%	5,887%	5,844%
WL	2,567%	6,784%	1,833%	3,071%	3,955%	3,430%	6,436%	3,217%	3,205%	4,975%
WE	0,498%	1,189%	0,636%	1,302%	1,962%	2,793%	3,133%	1,503%	1,582%	1,130%
WF	1,960%	12,510%	3,066%	3,597%	3,106%	1,918%	3,192%	5,775%	6,197%	4,254%
WM	3,475%	1,184%	3,854%	2,559%	2,109%	2,067%	3,124%	1,806%	1,552%	1,600%

Table. 5. Percentage of Driving Force Weights (DFW) for each environmental pressure and Economic Output per world region in 2022.

## Direct and indirect Pulling Force Weights and Driving Force Weights for all regions and each environmental pressure.



**Fig. 5. Direct and indirect Pulling Force Weights for all regions and each environmental pressure.**  $F_i$  represents the direct pulling force weight and  $E_i$  represents the indirect pulling force weight. DEU = Domestic Extraction Used; GHG = Greenhouse gasses emissions; MAE = Marine Aquatic Ecotoxicity; PMR = Particulate Matter/Respiratory; WCB = Water Consumption Blue; FAE = Freshwater Aquatic Ecotoxicity; LUC = Land Use Change; PHO = Photochemical Oxidation; TEX = Terrestrial Ecotoxicity.



**Fig. 6. Direct and indirect Driving Force Weights for all regions and each environmental pressure.**  $F_i$  represents the direct driving force weight and  $E_i$  represents the indirect driving force weight. DEU = Domestic Extraction Used; GHG = Greenhouse gasses emissions; MAE = Marine Aquatic Ecotoxicity; PMR = Particulate Matter/Respiratory; WCB = Water Consumption Blue; FAE = Freshwater Aquatic Ecotoxicity; LUC = Land Use Change; PHO = Photochemical Oxidation; TEX = Terrestrial Ecotoxicity.