

# Codebook

## Environment



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Based on Demscore  
Version 3.0

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# 1 Explanatory Notes

## 1.1 Release Notes v3

Demscore provides worldwide free access to harmonized data on Democracy, Environment, Migration, Social Policy, Conflict and Representation from several of the world's most prominent social science research institutes. The interdisciplinary nature of Demscore data facilitates large-scale comparative analyses. This is essential to advance adequate policy responses to complex societal challenges associated with the Sustainable Development Goals (SDGs) and beyond, facing Sweden, Europe, and the world today.

With a firm commitment to transparency and openness, Demscore v3 enables users to gain comprehensive insights into various topics across the social sciences. The joint infrastructure ensures data integrity and quality at the highest international standards and maximizes usability in the measurement of contextual data with 25.000 variables across nearly all countries in the world, from 1750 to the present.

This creates critical time- and cost saving advantages in data collection, management, distribution, and not the least for end-users in the scientific community. Demscore's unique approach to translating and merging data scales up to a total of 378.708 variable versions available in the infrastructure, storing a total of 9.2 billion non-missing observations.

This collaborative effort between leading Swedish universities pushes the scale of social science data to a new level and offers unprecedented possibilities for interdisciplinary research and knowledge advancement.

These are the key features of Demscore:

1. **Customized Download:** A fully normalized, joint PostgreSQL database, sophisticated programming, and a user-friendly web-based interface for users to generate custom-designed datasets and codebooks for download.
2. **Translations and Data Merges:** Demscore currently offers more than 1000 merge options between datasets.
3. **Metadata:** Demscore takes information on and organization of metadata to new heights with the inclusion of customized codebooks, a detailed methodology document, and a comprehensive handbook.
4. **Handling of Missing Data:** Demscore pioneers in developing an innovative approach to tackle missing data. Researchers can now account for missing values with increased precision, leading to more robust and reliable analyses.
5. **Merge Scores:** Demscore introduces a unique merge mechanism. This powerful tool enables researchers to combine datasets effortlessly, uncovering connections and patterns that were previously hidden in isolated data silos.
6. **Thematic Datasets:** Demscore provides researchers with curated thematic datasets, each focused on a specific topic. These datasets bring together relevant variables from across the Demscore partners, facilitating in-depth investigations and comprehensive analyses of specific domains.
7. **Interactive Web Portal:** In addition to all the above, Demscore's web portal offers interactive visualization tools, user support and additional information on all partners and data sources.

For more information, please visit <https://www.demscore.se/> or contact [contact@demscore.se](mailto:contact@demscore.se).

## 1.2 New in Demscore version 3

A detailed description of changes and additions made for version 3 compared to version 2 can be found in the Methodology Document.

## 1.3 The Demscore Codebook

The autogenerated Demscore Codebook lists variable entries for those variables chosen by the user along with citation guidelines and licenses per variable.

The meta data is extracted from the codebooks per dataset stored in a table in the Demscore PostgreSQL database with one row per variable for all datasets. This table includes codebook entries, variable tags, labels, and other variable information in LaTeX format used to generate an automated codebook.

Demscore maintains a single set of standard entries for metadata across all datasets, to which all project members contribute their information. Additionally, variables within different datasets may have varying sets of additional information requirements specific to each dataset. These dataset-specific entries are also included, but they are presented as variable-specific metadata beneath the standard entries.

At the outset of the harmonization process, Demscore underwent a thorough variable name cleanup. This involved tasks such as replacing spaces or dots in variable names with underscores and converting all letters to lowercase. Notably, the original tags remain preserved and stored in the PostgreSQL table. Each variable in Demscore is accessible in both short and long forms. The short form comprises the cleaned version of the original variable tag, while the long form starts with the dataset name from which it originates, followed by the cleaned variable name.

For instance, the original name of the variable *MinisterPersonalID* from the H-DATA Foreign Minister Dataset is included as *ministerpersonalid* (short form) and *hdata\_fomin\_ministerpersonalid* (long form) in Demscore.

In addition, each dataset includes Demscore unit-identifier variables which are named according to the following naming scheme: Beginning with *u\_*, followed by the name of the primary unit and finally the variable tag. The *year-* variable from the COMPLAB SPIN The Out-of-Work Benefits Dataset (OUTWB), which is part of the primary unit *u\_complab\_country\_year* has the Demscore unit identifier name *u\_complab\_country\_year\_year*.

## 1.4 Methodology

For details on our methodology please see the Demscore Methodology document available for download on the Demscore website.

## 1.5 Citations

The Demscore project does not have a formal citation of its own. Hence, when using Demscore, we suggest that you cite the respective projects and datasets. We indicate how every dataset is to be cited in the autogenerated codebook you retrieve with your data download, both in the dataset description and the codebook entry for each variable. Most often it is sufficient to cite the dataset a variable originates from, but sometimes there is a variable specific citation listed in the codebook entry in addition to that. For these cases, please also add the variable specific citation to the reference list of your publication. Full references are linked in the codebook entries of the variables and listed in the codebook's bibliography. We suggest you to also cite the Demscore Methodology Document when using data retrieved through Demscore.

## 1.6 Missing Data

Demscore indicates different types of missingness for observations in the customized datasets:  
**Missing in original data** = Whenever an observation in the original variable is a missing (NA, missing code such as 7777, blank cell), we preserve this missing value. When the original source has special codes for various types of missing, those are preserved.

**Missing code: -11111** = Demscore code for observation is missing due to the translation/merge, i.e., missing data due to no data being included for this combination of identifiers in the end Output Unit.

**Missing code: -22222** = No observation is merged/translated, but the original data contains information for these identifier combinations elsewhere. For these cases, we use a different code. The

user needs to consult the reference documents (Methodology Document Section 5.1. or the Demscore Handbook) to clarify why the translation to the identifier combinations in the end Output Unit was not possible.

Please note that an observation that is missing in its original output unit does not take the value -11111, but appears as NA/blank cell in the customized dataset.

## 1.7 Download ID

The download ID allows the user to share the ID with other users for replication purposes. A user can type the download ID into the Demscore website and retrieve the same download selection and files as the original user. This ID is autogenerated for each download from the Demscore website and will always retrieve the same data, even if the Demscore version was updated in the meantime.

Download ID:

## 1.8 Unit Identifier Variables

An Output Unit is defined as an output format in which variables can be retrieved from one or more datasets through a strictly defined output grid. A unit table defining this output grid contains unit identifier columns with u\_ prefixes and the table is sorted based on these unit identifier columns and has a fixed number of rows. Unit columns are based on the columns that constitute the unit of analysis in a dataset. They are added to the original dataset and marked by a unit prefix (consisting of a u\_ and the dataset unit name) before the original variable name. Unit columns can contain slightly modified data, e.g., missing values are replaced by a default value. Sometimes we add additional columns to the unit table, for instance if a dataset includes both a country\_id column with a numeric country code, we add the variable storing the full country name to the unit table as well for better readability.

## 1.9 Thematic Dataset

All environment variables

## 1.10 Output Unit Identifier Variables in the Chosen Unit

:

## 2 COMPLAB

Based at Stockholm University, the **Comparative Policy Laboratory (COMPLAB)**, provides vital policy data across three areas: environmental, social, and migration policy. The **Social Policy Indicators (SPIN)** database provides the foundations for new comparative and longitudinal research on causes and consequences of welfare states. Building on T.H. Marshall’s ideas about social citizenship, SPIN makes available comparative data on social rights and duties of citizens, thereby moving research beyond analyses of welfare state expenditures. The SPIN database is instead oriented towards analyses of institutions as manifested in social policy legislation. Data are carefully collected in a coherent and consistent methodological manner to facilitate quantitative research of social policy across time and space. To date, SPIN covers 36 countries, of which several have data on core social policy programs from 1930 to 2019. More information is available on the project’s website: <https://www.su.se/comparative-policy-laboratory/data/spin-1.644259>

**GRACE, Governing the Anthropocene – Environmental Policy and Outcomes in a Comparative Perspective**, is a longitudinal and comparative study on environmental governance has created a dataset of national policy responses for environmental management and protection in 37 countries for the period 1970-2022. <https://www.su.se/comparative-policy-laboratory/data/grace-1.645779>

**The Migration Policy Database (MIGPOL)** consists of a range of indicators compiled on behalf of leading data projects in the field of comparative migration policy research. It also contains original data on the rights of irregular migrants which will soon be added to Demscore. <https://www.su.se/comparative-policy-laboratory/data/migpol-1.645783> Read more about COMPLAB here: <https://www.su.se/comparative-policy-laboratory/>

### 2.1 COMPLAB GRACE - Governing the Anthropocene

**Dataset tag:** complab\_grace

**Output Unit:** COMPLAB Country-Year, i.e., data is collected per country and year.

**Description:** The GRACE data set was originally intended to provide a measure of the extent of state involvement in addressing environmental problems, but can be used for other more generic purposes as well. The rationale for the GRACE data is to base coding on a set of pre-defined environmental policy problems and then search for national-level policy responses addressing those problems.

**Dataset citation:** Duit, Andreas, Sommerer, Thomas and Lim, Sijeong (2023) “The GRACE v.2.0 Data Set” Department of Political Science, Stockholm University.

**Link to original codebook**

[https://www.su.se/polopoly\\_fs/1.646073.1675772798!/menu/standard/file/GRACE%20Codebook%20v2.0%20Jan%202023.pdf](https://www.su.se/polopoly_fs/1.646073.1675772798!/menu/standard/file/GRACE%20Codebook%20v2.0%20Jan%202023.pdf)

**License:** Complab datasets are free to use. Although variables have been carefully extracted, processed and analyzed, no warranty is given that the information supplied is free from error. Researchers involved in the establishment of GRACE shall not be liable for any loss suffered through the use of any of this information. References to data should acknowledge the SPIN research infrastructure (see reference below) and the specific data module.

More detailed information on the dataset can be found at the following web page: <https://www.su.se/comparative-policy-laboratory/data/grace-1.645779>

#### 2.1.1 Identifiers

Variables in this section identify observations in the dataset.

##### 2.1.1.1 Country Code ISO (iso2c)

*Long tag:* complab\_grace\_iso2c

*Original tag:* iso2c

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

ISO Country Code

### 2.1.1.2 Country Code ISO (iso3c)

*Long tag:* complab\_grace\_iso3c

*Original tag:* iso3c

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

ISO Country Code

### 2.1.1.3 Country (country)

*Long tag:* complab\_grace\_country

*Original tag:* country

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Country name

## 2.1.2 Policy Implementation

Variables in this section indicate whether a certain policy was implemented or not. A policy is defined as a legally binding regulation that has been enacted by the highest law-making body in a given country. Policies are applicable to the entire national jurisdiction. Government reports, statements of intent, policy programs, campaigns, discussion papers, and private forms of regulation are not considered to be policies. Dates refer to when the policy came into force. All policies were coded as either absent (= 0) or implemented (=1) for a given country-year.

### 2.1.2.1 Policy in place index (pip)

*Long tag:* complab\_grace\_pip

*Original tag:* pip

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Cumulative number of policies in place.

**2.1.2.2 Sulphur content in gas oil (sgasoil)**

*Long tag:* complab\_grace\_sgasoil

*Original tag:* sgasoil

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at limiting sulphur content in gas oil. Limit values for the sulphur content of gas oil are usually given as a percentage of sulphur by weight (wt) e.g. 0.5percent or 0.3percent. Gas oil (i.e. light fuel oil also known as heating gas oil) is used for household heating. As sources like residential furnaces tend to be concentrated in urban areas, limitation on the sulphur content of gasoil aims at improving urban (local) air quality.

**2.1.2.3 Lead content in passenger car gasoline (pbpetrol)**

*Long tag:* complab\_grace\_pbpetrol

*Original tag:* pbpetrol

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Historically, lead was added to fuels to improve engine performance. The variable records if and when regulation for lead content in passenger car gasoline is introduced, typically in the form of limit values.

**2.1.2.4 Passenger car exhaust emissions (cars)**

*Long tag:* complab\_grace\_cars

*Original tag:* cars

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records if and when regulation for exhaust from passenger cars is first introduced. Passenger cars are defined as vehicles with at least four wheels, carrying not more than six (/eight) occupants or with a maximum mass 2.5t (/lt;3.5t). Policies included: technical requirements for new cars (and/or cars already in use), standards for certain pollutants, standards for the composition of motor fuels, subsidies or tax reductions for 'cleaner' cars, information campaigns, monitoring and/or periodical testing, etc.

**2.1.2.5 Airborne emissions from large combustion plants (plants)**

*Long tag:* complab\_grace\_plants

*Original tag:* plants

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17



*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at mitigating air emissions from large combustion plants (facilities with a capacity greater than 50 MW (Megawatt)). Policies aiming to reduce airborne emissions such as nitrogen oxide (NO), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), dust particulates or heavy metals are included.

#### **2.1.2.6 Bathing water quality improvement and monitoring (coliform)**

*Long tag:* complab\_grace\_coliform

*Original tag:* coliform

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at improving bathing water quality. Bathing water means natural running or still fresh waters or parts thereof and sea water, in which bathing is explicitly authorised by the competent authorities or bathing is not prohibited and is traditionally practised by a large number of bathers. Often regulations will be obligatory standards such as limit values for toxic substances and coliform bacteria, and/or monitoring programs.

#### **2.1.2.7 Hazardous substance in detergents (detergents)**

*Long tag:* complab\_grace\_detergents

*Original tag:* detergents

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at regulating toxic substances in household and business detergents. Policies may include bans of toxic substances, limit values, and /or labelling schemes.

#### **2.1.2.8 Efficient use of water in industrial production –tax or fee on groundwater extraction (effwater)**

*Long tag:* complab\_grace\_effwater

*Original tag:* effwater

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at improving the use of industrial groundwater. Policies often include taxes, levies and /or permits for groundwater extraction. In some cases, taxes are levied not on the water actually extracted but on the quantity for which a permit has been granted.

**2.1.2.9 Water protection – industrial discharges into surface water (surfacewater)**

*Long tag:* complab\_grace\_surfacewater

*Original tag:* surfacewater

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at mitigating industrial discharges into surface waters. Such emissions encompass a wide range of substances, as well as industrial waste water polluted with these substances, especially chemicals, heavy metals, nitrogen oxides, fish toxicity, and biochemical oxygen demand. Industrial discharges into surface water can be regulated by standards (limit values for specific emissions) or by taxes on the discharge of waste water.

**2.1.2.10 Contaminated site policy (sites)**

*Long tag:* complab\_grace\_sites

*Original tag:* sites

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at regulating liability for sites contaminated by industrial production. In most countries, liability schemes are developed to clarify the obligations of present and previous owners of a polluting industry. Another option is construct a fund to finance cleaning expenditures (a.k.a. superfunds). Other instruments relate to insurance policy, tax rebates or refunds for cleaning efforts, voluntary agreements for cleaning contaminated sites, etc.

**2.1.2.11 Soil quality (soil)**

*Long tag:* complab\_grace\_soil

*Original tag:* soil

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies that aim to preserve soil quality, often on agricultural land.

**2.1.2.12 Noise emissions from lorries (trucks) (lorries)**

*Long tag:* complab\_grace\_lorries

*Original tag:* lorries

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at mitigating noise pollution from lorries /trucks. Policies may include driving bans for lorries/trucks during night hours; constructing roads using low-noise pavements and/or special ‘noise walls’; subsidies for low emission vehicles; noise emission standards for new and/or old lorries, etc.

### **2.1.2.13 Noise levels around motorways (motorways)**

*Long tag:* complab\_grace\_motorways

*Original tag:* motorways

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at mitigating noise pollution from motorways. There may be different policy measures taken including: limit values for noise levels, road construction with low noise pavements; special ‘noise walls’; and nightly bans for trucks, etc. Generally, noise level standards are expressed in zones, in terms of distances in meters, where a certain amount of noise, expressed in dB(A), is allowed. Motorways is defined as having at least four lanes. Where there are different values, e.g. for urban and non-urban areas or based on industrial zoning policies, the strictest value is taken.

### **2.1.2.14 Energy efficiency of refrigerators (fridge)**

*Long tag:* complab\_grace\_fridge

*Original tag:* fridge

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at increasing energy efficiency of household refrigerators. Measures to promote efficiency mostly consist of labels that provide detailed information on possible energy cost savings to consumers. Some countries combine labels with subsidies for buyers of the most efficient types, or subsidies for returning an old inefficient refrigerator when buying a new one.

### **2.1.2.15 Feed-in tariffs (feedin)**

*Long tag:* complab\_grace\_feedin

*Original tag:* feedin

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies that allow, prescribe, or facilitate small-scale electricity production (from solar, geothermal, wind, biomass, or hydro) to be fed back into the electricity grid.

**2.1.2.16 Recycling of construction waste (constructionwaste)**

*Long tag:* complab\_grace\_constructionwaste

*Original tag:* constructionwaste

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at establishing a recycling system for waste from construction projects. The separation of hazardous wastes such as asbestos, lead, mercury and other heavy metals; hydrocarbons; paint adhesives, solvents, preservatives; contaminated soil and various materials containing PCBs usually plays a decisive role for the recycling of construction waste. Policies include prescriptions for on-site separation and recycling, promoting the development of easy-to-disassemble products, or ‘flanking’ instruments like financial incentives (landfill taxes) and landfill bans.

**2.1.2.17 Landfill waste treatment (landfill)**

*Long tag:* complab\_grace\_landfill

*Original tag:* landfill

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at regulating landfill waste treatment sites. Policies typically consist in regulations for permitting, placement, construction, and use of landfills.

**2.1.2.18 Recycling of glass (glass)**

*Long tag:* complab\_grace\_glass

*Original tag:* glass

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies that aim to establish recycling of household glass, often in the form of a deposit system.

**2.1.2.19 Recycling of Paper (paper)**

*Long tag:* complab\_grace\_paper

*Original tag:* paper

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies that aim to establish recycling of household paper and/or cardboard. Policies are usually some form of deposit system, mandatory rules, or recycling infrastructure.

**2.1.2.20 Environmental impact assessment (eia)**

*Long tag:* complab\_grace\_eia

*Original tag:* eia

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

An environmental impact assessment is a systematic assessment of environmental effects likely to arise from a project with the aim of ensuring that significant environmental impacts are identified, assessed and taken into consideration in the decision-making process. The policy is considered in place when prescribed by law as mandatory in at least one major environmental permitting process.

**2.1.2.21 Eco-labelling (ecolabel)**

*Long tag:* complab\_grace\_ecolabel

*Original tag:* ecolabel

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aiming at establishing an environmental labelling system. The practice of labelling products based on a wide range of environmental considerations in order to make relevant environmental information available to consumers. The policy is considered in place when prescribed by law as mandatory in at least one major group of household appliances.

**2.1.2.22 Eco-audit (ecoaudit)**

*Long tag:* complab\_grace\_ecoaudit

*Original tag:* ecoaudit

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies in support of management instrument which consists of a systematic, documented, regular and objective assessment of an organisation's performance with respect to environmental protection. Policies usually define third-party independent certifying and auditing bodies. The most common examples are ISO 14001 and EMAS labelling systems.

**2.1.2.23 Not in codebook (plan)**

*Long tag:* complab\_grace\_plan

*Original tag:* plan

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

No codebook entry.

#### **2.1.2.24 DDT ban (ddt)**

*Long tag:* complab\_grace\_ddt

*Original tag:* ddt

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Ban for using DDT. The policy is considered in place only when the ban is without exceptions.

#### **2.1.2.25 Endangered species (species)**

*Long tag:* complab\_grace\_species

*Original tag:* species

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the first introduction of policies aimed at defining, identifying, and protecting endangered species.

#### **2.1.2.26 Ministry of the Environment (ministry)**

*Long tag:* complab\_grace\_ministry

*Original tag:* ministry

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The introduction of a ministry in the national government mainly dealing with environmental issues.

#### **2.1.2.27 Environmental Protection Agency (agency)**

*Long tag:* complab\_grace\_agency

*Original tag:* agency

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The introduction of a national-level governmental agency mainly dealing with environmental issues. An agency is not directed by a minister, but typically by a civil servant.

**2.1.2.28 Council of Environmental Experts (experts)**

*Long tag:* complab\_grace\_experts

*Original tag:* experts

*Dataset citation:* Duit et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1937, Percent: 15.17

*Non-missing observations in chosen unit:* Sum: 1937, Percent: 6.5

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable records the introduction of a permanent national-level council of environmental experts reviewing and advising government on environmental matters.

### 3 QOG

The **Quality of Government (QoG)** Institute was founded in 2004 by Professor Bo Rothstein and Professor Sören Holmberg. It is an independent research institute within the Department of Political Science at the University of Gothenburg. QoG is comprised of about 30 researchers who conduct and promote research on the causes, consequences and nature of Good Governance and the Quality of Government (QoG) - that is, trustworthy, reliable, impartial, uncorrupted and competent government institutions. QoG's award-winning datasets focus on concepts related to quality of government, transparency, and public administration. The main objective of QoG's research is to address the theoretical and empirical problem of how political institutions of high quality can be created and maintained. A second objective is to study the effects of Quality of Government on a number of policy areas, such as health, the environment, social policy, and poverty. The QoG datasets draw on a number of freely available datasources. More information on how the variables are compiled for different QoG datasets can be found in the respective QoG codebooks available on their website. More information is available on the project's website: <https://www.gu.se/en/quality-government>

#### 3.1 QoG Environmental Indicators Dataset

**Dataset tag:** qog\_ei

**Output Unit:** QoG Country-Year, i.e., data is collected per country and year.

**Description:** The Quality of Government Environmental Indicators Dataset (QoG-EI) is a compilation of major freely available indicators measuring environmental performance of countries over time.

**Dataset citation:** Povitkina, Marina, Natalia Alvarado Pachon Cem Mert Dalli. 2021. The Quality of Government Environmental Indicators Dataset, version Sep21. University of Gothenburg: The Quality of Government Institute, <https://www.gu.se/en/quality-government>

**Link to original codebook**

[https://www.qogdata.pol.gu.se/data/codebook\\_ei\\_sept21\\_august2023.pdf](https://www.qogdata.pol.gu.se/data/codebook_ei_sept21_august2023.pdf)

**License:** The QoG datasets are open and available, free of charge and without a need to register your data. You can use them for your analysis, graphs, teaching, and other academic-related and non-commercial purposes. We ask our users to cite always the original source(s) of the data and our datasets.

We do not allow other uses of these data including but not limited to redistribution, commercialization and other for-profit usage. If a user is interested in such use or has doubts about the license, they will have to refer to the original source and check with them if this is allowed and what requirements they need to fulfill.

Be mindful that the original data sources are the only owners of their data and they can adjust their license without previous warning.

More detailed information on the dataset can be found at the following web page: <https://www.gu.se/en/quality-government/qog-data/data-downloads/environmental-indicators-dataset>

##### 3.1.1 Identifiers

Variables in this section alone or in combination uniquely identify rows in the dataset.

###### 3.1.1.1 Version (version)

*Long tag:* qog\_ei\_version

*Original tag:* version

*Dataset citation:* Povitkina et al. (2021)



*Merge scores:*

*Non-missing observations in original unit:* Sum: 11722, Percent: 94.85

*Non-missing observations in chosen unit:* Sum: 10185, Percent: 34.18

*Lost observations in chosen unit:* Sum: 1537 Percent: 13.11

*Description:*

Version

### 3.1.2 Accountable Climate Target

Dataset by: Frida Borang, Simon Felgendreher, Niklas Harring, and Asa Lofgren. The authors assess and compare the accountability of climate targets as outlined in the nationally determined contributions (NDC) of the Paris Agreement. Link to the original source: <https://www.mdpi.com/2071-1050/11/7/1861/html>

#### 3.1.2.1 Accountable Climate Target (act\_act)

*Long tag:* qog\_ei\_act\_act

*Original tag:* act\_act

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Boräng et al. (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 183, Percent: 1.48

*Non-missing observations in chosen unit:* Sum: 161, Percent: 0.54

*Lost observations in chosen unit:* Sum: 22 Percent: 12.02

*Description:*

A binary measure of whether a country has an accountable climate target (ACT) or not. An ACT is a precise emissions target for which other countries can hold a country - and only that country - accountable. A country has an ACT if it fulfills two criteria: 1) the country's nationally determined contribution (NDC) must state an economy-wide target in reference to emission levels from a past year, a target compared to the business-as-usual scenario, or a target in terms of the CO2 emissions per unit of gross domestic product (GDP); 2) the commitment must not be conditional upon receiving financial support from third parties. The measure is for 2015, at the time of the first NDCs.

### 3.1.3 Aquastat

Dataset by: Food and Agricultural Organization of the United Nations (FAO). AQUASTAT is the FAO global information system on water resources and agricultural water management. Link to the original source: <http://www.fao.org/aquastat/en/>

#### 3.1.3.1 Renewable internal freshwater resources (bln m3) (as\_rifr)

*Long tag:* qog\_ei\_as\_rifr

*Original tag:* as\_rifr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 168, Percent: 0.56

*Lost observations in chosen unit:* Sum: 12 Percent: 6.67

*Description:*

Renewable water resources (internal and external) include average annual flow of rivers and recharge of aquifers generated from endogenous precipitation and those water resources that are not generated in the country, such as inflows from upstream countries (groundwater and

surface water), and part of the water of border lakes and/or rivers. Measured in billion cubic meters (bln m3).

### 3.1.3.2 Water stress: freshwater withdrawal, proportion of available freshwater (as\_ws)

*Long tag:* qog\_ei\_as\_ws

*Original tag:* as\_ws

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 187, Percent: 1.51

*Non-missing observations in chosen unit:* Sum: 175, Percent: 0.59

*Lost observations in chosen unit:* Sum: 12 Percent: 6.42

*Description:*

The level of water stress: freshwater withdrawal as a proportion of available freshwater resources is the ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, after taking into account environmental flow requirements. Main sectors include agriculture, forestry and fishing, manufacturing, electricity industry, and services. This indicator is also known as water withdrawal intensity.

### 3.1.4 Bertelsmann Transformation Index

Dataset by: Bertelsmann Stiftung The Bertelsmann Stiftung's Transformation Index (BTI) analyzes and evaluates the quality of democracy, a market economy, and political management in 137 developing and transition countries. It measures successes and setbacks on the path towards democracy based on the rule of law and a socially responsible market economy. In-depth country reports provide the basis for assessing the state of transformation and persistent challenges and for evaluating the ability of policymakers to carry out consistent and targeted reforms. The BTI is the first cross-national comparative index that collects data to comprehensively measure the quality of governance during processes of transition. [Link to the original source: http://www.bti-project.org/en/index/](http://www.bti-project.org/en/index/)

#### 3.1.4.1 Environmental concerns taken into account (bti\_envc)

*Long tag:* qog\_ei\_bti\_envc

*Original tag:* bti\_envc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Donner et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1018, Percent: 8.24

*Non-missing observations in chosen unit:* Sum: 983, Percent: 3.3

*Lost observations in chosen unit:* Sum: 35 Percent: 3.44

*Description:*

Expert answer to the question "To what extent are environmental concerns effectively taken into account?"

The variable ranges from 1 to 10, where 1 is "Environmental concerns receive no consideration and are entirely subordinated to growth efforts. There is no environmental regulation"; 4 is "Environmental concerns receive only sporadic consideration and are often subordinated to growth efforts. Environmental regulation is weak and hardly enforced"; 7 is "Environmental concerns are taken into account but are occasionally subordinated to growth efforts. Environmental regulation and incentives are in place, but their enforcement at times is deficient"; and 10 is "Environmental concerns are effectively taken into account and are carefully balanced with growth efforts. Environmental

regulation and incentives are in place and enforced

### 3.1.5 Cooperation in International Climate Change Regime

Dataset by: Michèle B. Baettig, Simone Brander, Dieter M. Imboden The index and its components measure countries' cooperation within the international climate change regime. The Cooperation in International Climate Change Regime Index is an aggregate of five indicators: The United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol Indicators, which measure countries' commitment to common international goals, and the Reporting, Finance, and Emission Indicators, which measure the degree to which countries follow up on the respective commitments within the international regime. Link to the original source: <https://www.sciencedirect.com/science/article/abs/pii/S1462901108000440>

#### 3.1.5.1 Cooperation in International Climate Change Regime Index (ccci\_coop)

*Long tag:* qog\_ei\_ccci\_coop

*Original tag:* ccci\_coop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 186, Percent: 1.51

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 21 Percent: 11.29

*Description:*

The index aggregates the UNFCCC, Kyoto Protocol, Reporting, Finance, and Emission Indicators. All variables are summed and have equal weight except for the Emission Indicator which is given double weight. The index varies on a 0-6 scale.

#### 3.1.5.2 Emission Indicator (ccci\_em)

*Long tag:* qog\_ei\_ccci\_em

*Original tag:* ccci\_em

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 186, Percent: 1.51

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 21 Percent: 11.29

*Description:*

The indicator measures the status of CO2 emissions while accounting for differences in national population and different paths of economic development. Countries are assessed according to the Environmental Kuznets Curve (EKC), which indicates that the relationship between per capita CO2 emissions and per capita GDP is positive only up to a certain point of development, after which the relationship becomes negative. A +/- 50 percent interval is created for the EKC, and a trend is measured for each country from 1990 to 2002. If a country's trend is greater than the +50 percent band, the country scores 0. If a country's trend is less than the band, it scores 1.

#### 3.1.5.3 Finance Indicator (ccci\_fin)

*Long tag:* qog\_ei\_ccci\_fin

*Original tag:* ccci\_fin

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 190, Percent: 1.54

*Non-missing observations in chosen unit:* Sum: 166, Percent: 0.56

*Lost observations in chosen unit:* Sum: 24 Percent: 12.63

*Description:*

The indicator measures how well a country has upheld its financial obligations to the core budget of the UNFCCC. Countries were evaluated according to their *quot;quot;Status of Contributionsquot;quot;* reports from 1996 and 2005. A score of 1 is given if the country has paid all due payments up to the present year and at least 50 percent of the amount for the present year. The score decreases linearly to a score of 0 if the country has paid no contributions.

#### 3.1.5.4 Kyoto Protocol Indicator (ccci\_kyoto)

*Long tag:* qog\_ei\_ccci\_kyoto

*Original tag:* ccci\_kyoto

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 190, Percent: 1.54

*Non-missing observations in chosen unit:* Sum: 166, Percent: 0.56

*Lost observations in chosen unit:* Sum: 24 Percent: 12.63

*Description:*

This two-part indicator equally weighs the willingness and promptness of a country in adopting the Kyoto Protocol. Willingness is scored as either 0.5 if a country adopted the Kyoto Protocol by the end of 2005 or 0 if it did not. Promptness is scored on a declining scale that starts at 0.5 and ends at 0. The highest score is given if a country adopted the Kyoto Protocol at its earliest possible ratification in April 1998. The lowest score is given if a country had not ratified the Kyoto Protocol by the end of 2005.

#### 3.1.5.5 Reporting Indicator (ccci\_rep)

*Long tag:* qog\_ei\_ccci\_rep

*Original tag:* ccci\_rep

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 190, Percent: 1.54

*Non-missing observations in chosen unit:* Sum: 166, Percent: 0.56

*Lost observations in chosen unit:* Sum: 24 Percent: 12.63

*Description:*

This two-part indicator equally measures whether and how fast a country has submitted its latest National Communication (NC) on the state of its climate plan. The country is scored either 0.5 if it submitted the latest required NC before the end of 2005 or 0 if it did not. The country is given an additional 0.5 if the report was submitted before the deadline. This score decreases until reaching 0 for a submission 6 or more months after the deadline for Annex I (AI) countries, and a submission 36 months or more after the deadline for Non-Annex I (NAI) countries.

#### 3.1.5.6 UNFCCC Indicator (ccci\_unfccc)

*Long tag:* qog\_ei\_ccci\_unfccc

*Original tag:* ccci\_unfccc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bättig et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 190, Percent: 1.54

*Non-missing observations in chosen unit:* Sum: 166, Percent: 0.56

*Lost observations in chosen unit:* Sum: 24 Percent: 12.63

*Description:*

This two-part indicator equally weighs the willingness and promptness of a country in adopting the United Nations Framework Convention on Climate Change (UNFCCC). Willingness is scored as either 0.5 if a country adopted the UNFCCC by the end of 2005 or 0 if it did not. Promptness is scored on a declining scale that starts at 0.5 and ends at 0. The highest score is given if the country adopted the UNFCCC at its earliest possible ratification date in July 1992. The lowest score is given if a country had not ratified the UNFCCC at the time of the Kyoto Conference in December 1997.

### 3.1.6 Climate Change Knowledge Portal

Dataset by: The World Bank Group The Climate Change Knowledge Portal provides global data on historical and future climate, vulnerabilities, and impacts. The data on historical temperature and rainfall data included in this compilation comes from the historical CRU dataset. The CRU TS version 4.04 gridded historical dataset is derived from observational data and provides quality-controlled temperature and rainfall values from thousands of weather stations worldwide, as well as derivative products including monthly climatologies and long-term historical climatologies. The dataset is produced by the Climatic Research Unit (CRU) of the University of East Anglia (UEA) CRU-(Gridded Product). In order to present historical climate conditions, the World Bank Group's Climate Change Knowledge Portal (CCKP) uses the globally available observational datasets derived from CRU to quantify changes in mean annual temperature and mean annual precipitation for the period 1901-2019 per country. Link to the original source: <https://climateknowledgeportal.worldbank.org>

#### 3.1.6.1 Annual average rainfall (cckp\_rain)

*Long tag:* qog\_ei\_cckp\_rain

*Original tag:* cckp\_rain

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* The World Bank (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 11135, Percent: 90.1

*Non-missing observations in chosen unit:* Sum: 10002, Percent: 33.57

*Lost observations in chosen unit:* Sum: 1133 Percent: 10.18

*Description:*

Annual average rainfall in millimeters.

#### 3.1.6.2 Annual average temperature (cckp\_temp)

*Long tag:* qog\_ei\_cckp\_temp

*Original tag:* cckp\_temp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* The World Bank (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 11135, Percent: 90.1

*Non-missing observations in chosen unit:* Sum: 10002, Percent: 33.57

*Lost observations in chosen unit:* Sum: 1133 Percent: 10.18

*Description:*

Annual average temperature in Celsius.

### 3.1.7 Climate Change Laws of the World

Dataset by: Grantham Research Institute on Climate Change and the Environment Climate change-related laws and policies refer to legal documents related to reducing energy demand, promoting low carbon energy supply, low-carbon buildings, carbon pricing, lower industry emissions, tackling deforestation and promoting sustainable land use, other mitigation efforts, research and development, sustainable transportation, enhancing adaptation capabilities, and natural disaster risk management. The dataset only included laws and policies that have been passed by legislative branches or published by executive branches, and that are no longer in draft form. The dataset also captures major amendments to legislation. Laws that are outdated, either because they have been repealed, replaced, or reversed, are not included. The database distinguishes between Laws or legislative acts (e.g. acts, laws, decree-laws), which were passed by a parliament or equivalent legislative authority, and Policies, or other executive provisions (e.g. presidential decrees, executive orders, regulations, government policies, strategies, or plans), which were published or decreed by the government, president, or equivalent executive authority. Link to the original source: <https://climate-laws.org/>

#### 3.1.7.1 Climate change policy/executive provision in place (ccl\_exepp)

*Long tag:* qog\_ei\_ccl\_exepp

*Original tag:* ccl\_exepp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4044, Percent: 32.72

*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3

*Lost observations in chosen unit:* Sum: 379 Percent: 9.37

*Description:*

Number of climate change-related policies or other executive provisions (e.g., presidential decrees, executive orders, regulations, government policies, strategies, or plans), which were published or decreed by the government, president, or equivalent executive authority, in the recorded year.

#### 3.1.7.2 Climate change law in place (ccl\_leglp)

*Long tag:* qog\_ei\_ccl\_leglp

*Original tag:* ccl\_leglp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4044, Percent: 32.72

*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3

*Lost observations in chosen unit:* Sum: 379 Percent: 9.37

*Description:*

Number of climate change-related laws or legislative acts (e.g. acts, laws, decree-laws), which were passed by a parliament or equivalent legislative authority, in the recorded year.

#### 3.1.7.3 Climate change law or policy in place (ccl\_lpp)

*Long tag:* qog\_ei\_ccl\_lpp

*Original tag:* ccl\_lpp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:**Non-missing observations in original unit:* Sum: 4044, Percent: 32.72*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3*Lost observations in chosen unit:* Sum: 379 Percent: 9.37*Description:*

Number of climate change-related laws (legislative acts) and policies (executive provisions) adopted per year.

**3.1.7.4 Climate change mitigation law or policy in place (ccl\_mitlpp)***Long tag:* qog\_ei\_ccl\_mitlpp*Original tag:* ccl\_mitlpp*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)*Merge scores:**Non-missing observations in original unit:* Sum: 4044, Percent: 32.72*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3*Lost observations in chosen unit:* Sum: 379 Percent: 9.37*Description:*

Number of laws (legislative acts) or policies (executive provisions) related to climate change mitigation adopted per year.

Mitigation laws and policies refer to a legislative or executive disposition focused on curbing a country's greenhouse gases emissions in one sector or more. Measures can be directly related to emissions reductions, such as laws establishing a national carbon budget or cap and trade system, or indirectly related, such as laws or policies establishing relevant institutions or providing additional funding for research and development into low carbon technologies. Laws and policies addressing forests and land use are included as long as they explicitly support climate change mitigation through activities that reduce emissions and increase carbon removals. General forest management and conservation laws are not included, even if they may have implicit consequences for climate change mitigation.

**3.1.7.5 Number of climate change policies/executive provisions (ccl\_nexep)***Long tag:* qog\_ei\_ccl\_nexep*Original tag:* ccl\_nexep*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)*Merge scores:**Non-missing observations in original unit:* Sum: 4044, Percent: 32.72*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3*Lost observations in chosen unit:* Sum: 379 Percent: 9.37*Description:*

Cumulative sum of climate change-related policies or other executive provisions (e.g. presidential decrees, executive orders, regulations, government policies, strategies, or plans), which were published or decreed by the government, president, or equivalent executive authority.

**3.1.7.6 Number of climate change laws (ccl\_nlegl)***Long tag:* qog\_ei\_ccl\_nlegl*Original tag:* ccl\_nlegl*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4044, Percent: 32.72

*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3

*Lost observations in chosen unit:* Sum: 379 Percent: 9.37

*Description:*

Cumulative sum of climate change-related laws or legislative acts (e.g. acts, laws, decree-laws), which were passed by a parliament or equivalent legislative authority.

### 3.1.7.7 Number of climate change laws and policies (ccl\_nlp)

*Long tag:* qog\_ei\_ccl\_nlp

*Original tag:* ccl\_nlp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4044, Percent: 32.72

*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3

*Lost observations in chosen unit:* Sum: 379 Percent: 9.37

*Description:*

Cumulative sum of laws (legislative acts) and policies (executive provisions) related to climate change.

### 3.1.7.8 Number of climate change mitigation laws and policies (ccl\_nmitlp)

*Long tag:* qog\_ei\_ccl\_nmitlp

*Original tag:* ccl\_nmitlp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4044, Percent: 32.72

*Non-missing observations in chosen unit:* Sum: 3665, Percent: 12.3

*Lost observations in chosen unit:* Sum: 379 Percent: 9.37

*Description:*

Cumulative sum of laws (legislative acts) and policies (executive provisions) related to climate change mitigation.

Mitigation laws and policies refer to a legislative or executive disposition focused on curbing a country's greenhouse gases emissions in one sector or more. Measures can be directly related to emissions reductions, such as laws establishing a national carbon budget or cap and trade system, or indirectly related, such as laws or policies establishing relevant institutions or providing additional funding for research and development into low carbon technologies. Laws and policies addressing forests and land use are included as long as they explicitly support climate change mitigation through activities that reduce emissions and increase carbon removals. General forest management and conservation laws are not included, even if they may have implicit consequences for climate change mitigation.

### 3.1.8 EDGAR - Global Air Pollutant Emissions

Dataset by: European Commission The Emissions Database for Global Atmospheric Research (EDGAR) provides global past and present-day anthropogenic emissions of greenhouse gases and air



pollutants by country and on a spatial grid. EDGAR provides emission data for the following air pollutants: Ozone precursor gases: Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>x</sub>), Non-Methane Volatile Organic Compounds (NMVOC) and Methane (CH<sub>4</sub>). Acidifying gases: Ammonia (NH<sub>3</sub>), Nitrogen oxides (NO<sub>x</sub>) and Sulfur Dioxide (SO<sub>2</sub>). Primary particulates: Fine Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub> and Carbonaceous speciation (BC, OC). Emissions from large-scale biomass burning with Savannah burning, forest fires, and sources and sinks from land-use, land-use change, and forestry (LULUCF) are excluded. For the energy-related sectors, the activity data are mainly based on the energy balance statistics of IEA (2017) ([http://www.oecd-ilibrary.org/energy/co2-emissions-from-fuel-combustion-2017\\_co2\\_-fuel-2017-en](http://www.oecd-ilibrary.org/energy/co2-emissions-from-fuel-combustion-2017_co2_-fuel-2017-en)), whereas the activity data for the agricultural sectors originate mainly from FAO (2018) (<http://www.fao.org/faostat/en/home>). Additional information can be found in Crippa et al. (2019) Link to the original source: [https://edgar.jrc.ec.europa.eu/dataset\\_ap50](https://edgar.jrc.ec.europa.eu/dataset_ap50)

### 3.1.8.1 BC emissions (edgar\_bc)

*Long tag:* qog\_ei\_edgar\_bc

*Original tag:* edgar\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total BC (black carbon, particulate matter) emissions, aggregated across sectors per country. Units are kilotonnes (kt) of black carbon per year.

### 3.1.8.2 CH<sub>4</sub> emissions (edgar\_ch4)

*Long tag:* qog\_ei\_edgar\_ch4

*Original tag:* edgar\_ch4

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total CH<sub>4</sub> (methane) emissions aggregated across sectors per country. Units are kilotonnes (kt) of CH<sub>4</sub> per year.

### 3.1.8.3 CO emissions (edgar\_co)

*Long tag:* qog\_ei\_edgar\_co

*Original tag:* edgar\_co

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7695, Percent: 62.27

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 719 Percent: 9.34

*Description:*

The total CO (carbon monoxide) emissions aggregated across sectors per country. Emissions from large-scale biomass burning with Savannah burning, forest fires, and sources and sinks from land-use, land-use change, and forestry (LULUCF) are excluded. Units are kilotonnes (kt) of CO per year.

#### 3.1.8.4 N2O emissions (edgar\_n2o)

*Long tag:* qog\_ei\_edgar\_n2o

*Original tag:* edgar\_n2o

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7782, Percent: 62.97

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 806 Percent: 10.36

*Description:*

The total N2O (nitrous oxide) emissions aggregated across sectors per country. Units are kilotonnes (kt) of N2O per year.

#### 3.1.8.5 NH3 emissions (edgar\_nh3)

*Long tag:* qog\_ei\_edgar\_nh3

*Original tag:* edgar\_nh3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total NH3 (ammonia) emissions aggregated across sectors per country. Units are kilotonnes (kt) of NH3 per year.

#### 3.1.8.6 NMVOC emissions (edgar\_nmvoc)

*Long tag:* qog\_ei\_edgar\_nmvoc

*Original tag:* edgar\_nmvoc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total NMVOC (non-methane volatile organic compounds) emissions aggregated across sectors per country. Units are kilotonnes (kt) of NMVOC per year.

### 3.1.8.7 NOx emissions (edgar\_nox)

*Long tag:* qog\_ei\_edgar\_nox

*Original tag:* edgar\_nox

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7782, Percent: 62.97

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 806 Percent: 10.36

*Description:*

The total NOx (nitrogen oxides) emissions aggregated across sectors per country. Units are kilotonnes (kt) of NOx per year.

### 3.1.8.8 OC emissions (edgar\_oc)

*Long tag:* qog\_ei\_edgar\_oc

*Original tag:* edgar\_oc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7695, Percent: 62.27

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 719 Percent: 9.34

*Description:*

The total OC (organic carbon, particulate matter) emissions aggregated across sectors per country. Units are kilotonnes (kt) of OC per year.

### 3.1.8.9 PM10 emissions (edgar\_pm10)

*Long tag:* qog\_ei\_edgar\_pm10

*Original tag:* edgar\_pm10

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total PM10 (particulate matter, 10 micrometers or smaller) emissions aggregated across sectors per country. Units are kilotonnes (kt) of PM10 per year.

**3.1.8.10 PM2.5 emissions (edgar\_pm25)**

*Long tag:* qog\_ei\_edgar\_pm25

*Original tag:* edgar\_pm25

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7811, Percent: 63.21

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 835 Percent: 10.69

*Description:*

The total PM2.5 (particulate matter, 2.5 micrometers or smaller) emissions aggregated across sectors per country. Units are kilotonnes (kt) of PM2.5 per year.

**3.1.8.11 SO2 emissions (edgar\_so2)**

*Long tag:* qog\_ei\_edgar\_so2

*Original tag:* edgar\_so2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7695, Percent: 62.27

*Non-missing observations in chosen unit:* Sum: 6976, Percent: 23.41

*Lost observations in chosen unit:* Sum: 719 Percent: 9.34

*Description:*

The total SO2 (sulfur dioxide) emissions aggregated across sectors per country. Units are kilotonnes (kt) of SO2 per year.

**3.1.9 EDGAR - Fossil CO2 Emissions of All World Countries**

Dataset by: European Commission The Emissions Database for Global Atmospheric Research (EDGAR) provides global past and present-day anthropogenic emissions of greenhouse gases and air pollutants by country and on a spatial grid. Fossil CO2 emissions of all world countries from EDGAR provides an independent estimate of CO2 emissions for each world country, based on a robust and consistent methodology stemming from the latest IPCC guidelines and most recent activity data. Fossil CO2 emission data are available for the time period 1970-2019. Link to the original source: [https://edgar.jrc.ec.europa.eu/report\\_2020](https://edgar.jrc.ec.europa.eu/report_2020)

**3.1.9.1 CO2 emissions per GDP (edgar\_co2gdp)**

*Long tag:* qog\_ei\_edgar\_co2gdp

*Original tag:* edgar\_co2gdp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario,

Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5238, Percent: 42.39

*Non-missing observations in chosen unit:* Sum: 4749, Percent: 15.94

*Lost observations in chosen unit:* Sum: 489 Percent: 9.34

*Description:*

The total CO<sub>2</sub> (carbon dioxide) emissions per country, divided by each country's respective GDP (gross domestic product). Units are tonnes of CO<sub>2</sub> per thousand US dollars of GDP.

Includes all fossil CO<sub>2</sub> sources, such as fossil fuel combustion, non-metallic mineral processes (e.g., cement production), metal (ferrous and non-ferrous) production processes, urea production, agricultural liming, and solvents use. Large-scale biomass burning with Savannah burning, forest fires, and sources and sinks from land-use, land-use change, and forestry (LULUCF) are excluded.

### 3.1.9.2 CO<sub>2</sub> emissions per capita (edgar\_co2pc)

*Long tag:* qog\_ei\_edgar\_co2pc

*Original tag:* edgar\_co2pc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8065, Percent: 65.26

*Non-missing observations in chosen unit:* Sum: 7349, Percent: 24.67

*Lost observations in chosen unit:* Sum: 716 Percent: 8.88

*Description:*

The total CO<sub>2</sub> (carbon dioxide) emissions per country, divided by each country's respective population. Units are tonnes of CO<sub>2</sub> per capita per year.

Includes all fossil CO<sub>2</sub> sources, such as fossil fuel combustion, non-metallic mineral processes (e.g., cement production), metal (ferrous and non-ferrous) production processes, urea production, agricultural liming, and solvents use. Large-scale biomass burning with Savannah burning, forest fires, and sources and sinks from land-use, land-use change, and forestry (LULUCF) are excluded.

### 3.1.9.3 CO<sub>2</sub> emissions total (edgar\_co2t)

*Long tag:* qog\_ei\_edgar\_co2t

*Original tag:* edgar\_co2t

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Crippa, Solazzo, Huang, Guizzardi, Koffi, Muntean, Schieberle, Friedrich & Janssens-Maenhout (2020), Crippa, Guizzardi, Muntean, Schaaf, Solazzo, Monforti-Ferrario, Olivier & Vignati (2020), European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8065, Percent: 65.26

*Non-missing observations in chosen unit:* Sum: 7349, Percent: 24.67

*Lost observations in chosen unit:* Sum: 716 Percent: 8.88

*Description:*

The total CO<sub>2</sub> (carbon dioxide) emissions aggregated across sectors per country. Includes all fossil CO<sub>2</sub> sources, such as fossil fuel combustion, non-metallic mineral processes (e.g., cement production), metal (ferrous and non-ferrous) production processes, urea production,

agricultural liming, and solvents use. Large-scale biomass burning with Savannah burning, forest fires, and sources and sinks from land-use, land-use change, and forestry (LULUCF) are excluded. Units are kilotonnes (kt) of CO<sub>2</sub> per year.

### 3.1.10 The Environmental Democracy Index

Dataset by: The Access Initiative (TAI) and World Resources Institute (WRI) The Environmental Democracy Index measures the degree to which countries have enacted legally binding rules that provide for environmental information collection and disclosure, public participation across a range of environmental decisions, and fair, affordable, and independent avenues for seeking justice and challenging decisions that impact the environment. The index evaluates 70 countries across 75 legal indicators, based on objective and internationally recognized standards established by the United Nations Environment Programmes (UNEP) Bali Guidelines. EDI also includes a supplemental set of 24 limited practice indicators that provide insight on a country's performance in implementation. Link to the original source: <https://www.environmentaldemocracyindex.org/node/12732.html>

#### 3.1.10.1 Environmental Democracy Index (edi\_edi)

*Long tag:* qog\_ei\_edi\_edi

*Original tag:* edi\_edi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

EDI measures to which degree countries have enacted legally binding rules that provide for environmental information collection and disclosure, public participation across a range of environmental decisions, and fair, affordable, and independent avenues for seeking justice and challenging decisions that impact the environment.

It is an average of 3 pillars that measure:

- 1) the right to freely access information on environmental quality and problems (Access to information pillar);
- 2) the right to participate meaningfully in decision-making (Participation pillar);
- 3) the right to seek enforcement of environmental laws or compensation for harm (Justice pillar).

The pillars are calculated by combining 75 legal indicators that are scored from 0 (worst) to 3 (best), producing an overall score that falls within this same range. The pillars are given equal weight when creating an average.

#### 3.1.10.2 Affordable access to relief and remedy (Guideline 20) (edi\_gaarr)

*Long tag:* qog\_ei\_edi\_gaarr

*Original tag:* edi\_gaarr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent states ensure that the access of members of the public concerned to review procedures relating to the environment is not prohibitively

expensive and to which extent they consider the establishment of appropriate assistance mechanisms to remove or reduce financial and other barriers to access to justice.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (20.1) To what extent are there legal mechanisms in place to ensure that access to review procedures relating to the environment for members of the public concerned is not prohibitively expensive?; (20.2) To what extent does the law provide assistance mechanisms to reduce financial barriers to access to justice?; (20.3) To what extent does the law provide assistance mechanisms to reduce gender-related non-financial barriers to access to justice?; (20.4) To what extent does the law provide assistance mechanisms to reduce other non-financial and non-gender barriers to access to justice?; (P20.1) In the last 5 years, has a public interest case relating to the environment or natural resources been filed which was supported by government legal aid?; (P20.2) In the last 10 years, have there been cases relating to the environment or natural resources where the costs of proceedings was awarded against a public interest complainant/plaintiff/petitioner (c/p/p)?; (P20.3) In the last 5 years have there been cases related to the environment or natural resources where the costs of proceedings were awarded in favor of a public interest complainant/plaintiff/petitioner (c/p/p)?

### 3.1.10.3 Alternative dispute resolution for environmental issues (Guideline 26) (edi\_gadrei)

*Long tag:* qog\_ei\_edi\_gadrei

*Original tag:* edi\_gadrei

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states encourage the development and use of alternative dispute resolution mechanisms where these are appropriate. In scoring this indicator, “alternate dispute resolution mechanisms” include mediation, conciliation, or arbitration adopted by institutions as a means of resolving environmental disputes.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (26.1) To what extent does the law provide for the possibility to use alternative dispute resolution mechanisms to address violations of the right of access to environmental information, public participation or cases of environmental harm?; (26.2) To what extent does the law provide incentives for the use of alternative dispute resolution mechanisms where these are appropriate?; (P26.1) In the last 5 years, has a public interest case relating to the environment or natural resources been solved by an alternate conflict resolution method (such as mediation, arbitration and conciliation)?

### 3.1.10.4 Awareness and education about remedies and relief (Guideline 23) (edi\_gaerr)

*Long tag:* qog\_ei\_edi\_gaerr

*Original tag:* edi\_gaerr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states provide adequate information to the public

about the procedures operated by courts of law and other relevant bodies in relation to environmental issues.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (23.1) To what extent does the law require the State or State agencies or institutions to provide information to the public about court procedures relating to environmental issues?; (23.2) To what extent does the law require the State or State agencies or institutions to provide information to the public about review procedures relating to environmental issues provided by bodies other than courts of law?; (P23.1) Is there an easily understandable explanation of court procedures in the national language(s) on the website or office of the highest national court or the apex national environmental agency?

#### **3.1.10.5 Accessibility of information requests (Guideline 1) (edi\_gair)**

*Long tag:* qog\_ei\_edi\_gair

*Original tag:* edi\_gair

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures the existence of a clear positive legal mandate that gives the public the right to access environmental information upon request.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (1.1) To what extent does the law mandate access to environmental information to be provided upon request?; (1.2) To what extent does the law provide for natural or legal persons' access to environmental information?; (1.3) To what extent does the law make access to environmental information affordable?; (1.4) To what extent does the law provide for timely access to environmental information?; (1.5) To what extent does the law include public authorities under access to environmental information provisions?; (1.6) To what extent does the law not require proof of legal or other interest for access to environmental information?

#### **3.1.10.6 Due account of public comments (Guideline 11) (edi\_gapc)**

*Long tag:* qog\_ei\_edi\_gapc

*Original tag:* edi\_gapc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that due account is taken of the comments of the public in the decision-making process and that the decisions are made public.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (11.1) To what extent do the laws concerning environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making require the State or State agencies at the national level to take due account of the public's comments in decision-making relating to the environment?;



(11.2) To what extent do the laws concerning environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making require that decisions relating to the environment are made public?; (P11.1) In the three most recent large-scale extractive or development projects, did the relevant agency respond to public comments on the environmental impact assessment and make the responses available to the public?

### 3.1.10.7 Broad standing (Guideline 18) (edi\_gbs)

*Long tag:* qog\_ei\_edi\_gbs

*Original tag:* edi\_gbs

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states provide broad interpretation of standing in proceedings concerned with environmental matters with a view to achieving effective access to justice.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (18.1) To what extent does the law recognize broad legal standing in proceedings concerned with environmental matters?; (P18.1) In the last 5 years, have NGOs been granted legal standing by national courts in public interest environmental cases?

### 3.1.10.8 Effective enforcement (Guideline 22) (edi\_gee)

*Long tag:* qog\_ei\_edi\_gee

*Original tag:* edi\_gee

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure the timely and effective enforcement of decisions in environmental matters taken by courts of law and by administrative and other relevant bodies.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (22.1) To what extent does the law provide for the effective enforcement of criminal court decisions relating to the environment?; (22.2) To what extent does the law require the enforcement of criminal court decisions relating to the environment to be timely?; (22.3) To what extent does the law provide for the effective enforcement of civil court decisions relating to the environment?; (22.4) To what extent does the law require the enforcement of civil court decisions relating to the environment to be timely?; (22.5) To what extent does the law provide for effective enforcement of decisions relating to the environment taken by administrative and other relevant bodies?; (22.6) To what extent does the law ensure the enforcement of administrative decisions relating to the environment will be timely?

### 3.1.10.9 Environmental information in the public domain (Guideline 2) (edi\_gepd)

*Long tag:* qog\_ei\_edi\_gepd

*Original tag:* edi\_gepd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states provide environmental information in the public domain that include, among other things, information about environmental quality, environmental impacts on health and factors that influence them, in addition to information about legislation and policy, and advice about how to obtain information.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (2.1) To what extent does the law require information on environmental quality to be made proactively available to the public?; (2.2) To what extent does the law require environmental information on environmental factors that influence health be placed in the public domain?; (2.3) To what extent does the law require information on environmental laws and policy be placed in the public domain?; (2.4) To what extent does the law require publicly available information and advice on how to obtain environmental information?; (P2.1) Are real time air quality data for the capital city of your country made available online by the government?; (P2.2) In the last two years, has annual drinking water quality data for water services in your capital city been proactively provided to consumers either by mail (post) or online and do they meet the minimum standards established by the regulatory agency?

#### **3.1.10.10 Early public participation (Guideline 8) (edi\_gepp)**

*Long tag:* qog\_ei\_edi\_gepp

*Original tag:* edi\_gepp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure opportunities for early and effective public participation in decision-making related to the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (8.1) To what extent does the law require the public concerned to have opportunities to participate in decision making related to the environment?; (8.2) To what extent does the law require public participation opportunities to be provided early in the decision-making process?; (8.3) To what extent does the law require that the public concerned be provided with information about its opportunities to participate early in the decision-making process?; (P8.1) Choose three recent controversial development projects (in terms of press coverage and potential cost and/or revenue of project) that were approved through an Environmental Impact Assessment (EIA) process under national law. Were public notices given seeking comments on the EIA or its terms of reference?

#### **3.1.10.11 Early warning information (Guideline 6) (edi\_gewi)**

*Long tag:* qog\_ei\_edi\_gewi

*Original tag:* edi\_gewi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that all information that would enable the public to take measures to prevent imminent threat of harm to human health or the environment is disseminated immediately.

This indicator is an arithmetic average of expert answers to question on a scale from 0 (worst) to 3 (best): (6.1) When there is an imminent threat of harm to human health or the environment, to what extent does the law obligate or mandate the government agencies to immediately disseminate information to the public that enables it to take preventive action?

### **3.1.10.12 Fair, timely, and independent review (Guideline 19) (edi\_gftir)**

*Long tag:* qog\_ei\_edi\_gftir

*Original tag:* edi\_gftir

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states provide effective procedures for timely review by courts of law or other independent and impartial bodies, or administrative procedures, of issues relating to the implementation and enforcement of laws and decisions pertaining to the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (19.1) To what extent does the law provide procedures for the review of issues relating to the implementation and enforcement of laws and decisions pertaining to the environment by courts or other bodies, or administrative procedures?; (19.2) To what extent does the law require review procedures regarding the implementation and enforcement of laws and decisions pertaining to the environment to be decided by impartial and independent courts or bodies?; (19.3) To what extent does the law require review procedures regarding the implementation and enforcement of laws and decisions pertaining to the environment to be timely?; (19.4) To what extent does the law require review procedures regarding the implementation and enforcement of laws and decisions pertaining to the environment to be fair and equitable?; (19.5) To what extent does the law require review procedures regarding the implementation and enforcement of laws and decisions pertaining to the environment to be open and transparent? (P19.1) In the last 5 years have there been sanctions or corrective actions imposed by a national court of law or other independent and impartial body, for violation of laws and decisions pertaining to the environment?

### **3.1.10.13 Grounds for refusal (Guideline 3) (edi\_ggr)**

*Long tag:* qog\_ei\_edi\_ggr

*Original tag:* edi\_ggr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states clearly define in their law the specific grounds on which a request for environmental information can be refused. The grounds for refusal are to be interpreted narrowly, taking into account the public interest served by disclosure.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (3.1) To what extent does the law clearly define specific grounds on which a request for environmental information can be refused?; (3.2) To what extent does the law require environmental information that is covered by a ground for refusal to be severed (separated) from the rest of the information before being released to the requester?; (3.3) To what extent does the law require the decision-maker to take into account the public interest served by disclosure when considering exemptions (grounds for refusal)?

#### **3.1.10.14 Information collection and management (Guideline 4) (edi\_gicm)**

*Long tag:* qog\_ei\_edi\_gicm

*Original tag:* edi\_gicm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that their competent public authorities regularly collect and update relevant environmental information, including information on environmental performance and compliance by operators of activities potentially affecting the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (4.1) To what extent are competent public authorities mandated by law to regularly collect and update relevant environmental information?; (4.2) To what extent does the law mandate the public authorities to comprehensively monitor the environmental performance and compliance by operators of activities potentially affecting the environment, and to collect and update such information?; (4.3) To what extent is there a system established by the law ensuring adequate public information about proposed and existing activities that may significantly affect the environment?; (P4.1) Does a national agency in your country ensure that daily air emission and waste water discharges by large-scale industries at a facility level are proactively made publicly available either online, through a public register or at a library; if so, is that information comparable to a national standard?

#### **3.1.10.15 Informed participation (Guideline 10) (edi\_gip)**

*Long tag:* qog\_ei\_edi\_gip

*Original tag:* edi\_gip

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that all information relevant for decision-making related to the environment is made available, in an objective, understandable, timely, and effective manner, to the members of the public concerned.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (10.1) To what extent do the laws concerning: environmental impact assessments, pollution control permits, forest concessions, extractive industries, protected areas and terrestrial biodiversity, and environmental policy-making require all information relevant to decision-making processes relating to the environment to be made available to the public concerned, without the public having to make an official information request?; (10.2) To what extent do the laws concerning environmental impact assessments, pollution control permits, forest concessions, extractive industries, protected areas and terrestrial biodiversity, and environmental policy-making require that proactively released information relevant to decision-making be understandable to the public concerned?; (10.3) To what extent do the laws concerning environmental impact assessments, pollution control permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making require the information relevant to decision-making to be provided in a timely fashion to the public concerned?; (P10.1) Are the Environmental Impact Assessments for development projects accessible to the public online or at a national government agency?; (P10.2) Is information on wastewater discharge and air emission permit violations available to the public online or at a government agency?; (P10.3) Are extractive industry licenses/permits available to the public online or at a government agency?; (P10.4) During the past three years, in the process of granting forest use contracts, has the relevant agency made publicly available information related to such contracts?; (P10.5) Are the forest use contracts, once finalized, made available to the public online or at a government agency?

### 3.1.10.16 Integrating public input for rule-making (Guideline 13) (edi\_gipirm)

*Long tag:* qog\_ei\_edi\_gipirm

*Original tag:* edi\_gipirm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states consider appropriate ways of ensuring, at an appropriate stage, public input into the preparation of legally binding rules that might have a significant effect on the environment and into the preparation of policies, plans and programmes relating to the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (13.1) To what extent does the law require opportunities for public input at an appropriate stage during preparation of legally binding rules (rule-making or preparation of subsidiary legislation, regulations, etc.) that might have a significant effect on the environment?; (13.2) To what extent do the laws concerning environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, protected areas and terrestrial biodiversity, and environmental policy-making require the State or state agencies to provide opportunities for public input at an appropriate stage of the preparation of policies?; (13.3) To what extent do the laws concerning environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, protected areas and terrestrial biodiversity, and environmental policy-making require there to be opportunities for public input at an appropriate stage of the preparation of plans relating to the environment?; (13.4) To what extent does the law require there to be opportunities for public input at an appropriate stage of the preparation of programs relating to the environment?

### 3.1.10.17 Information request appeals (Guideline 15) (edi\_gira)

*Long tag:* qog\_ei\_edi\_gira

*Original tag:* edi\_gira

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that any natural or legal person who considers that his or her request for environmental information has been unreasonably refused, in part or in full, inadequately answered or ignored, or in any other way not handled in accordance with applicable law, has access to a review procedure before a court of law or other independent and impartial body to challenge such a decision, act or omission by the public authority in question.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (15.1) To what extent do the laws concerning environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, protected areas and terrestrial biodiversity, and environmental policy-making provide for access to a review procedure in cases where environmental information request have been denied?; (15.2) To what extent does the law make the review available to all natural or legal persons?; (15.3) To what extent does the law provide access to a review procedure before a court of law or other independent and impartial body in cases when an environmental information request has been denied?; (P15.1) Is there a court, tribunal or other independent or impartial body at the national level with a physical office to receive and process public complaints about the refusal of environmental information?

### **3.1.10.18 Public access to judicial and administrative decisions (Guideline 24) (edi\_gpajad)**

*Long tag:* qog\_ei\_edi\_gpajad

*Original tag:* edi\_gpajad

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that decisions relating to the environment taken by a court of law, other independent and impartial or administrative body, are publicly available, as appropriate and in accordance with national law.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (24.1) To what extent does the law require judicial decisions relating to the environment to be made publicly available?; (24.2) To what extent does the law require decisions relating to the environment taken by administrative bodies to be made publicly available?; (24.3) To what extent does the law require decisions relating to the environment taken by other independent and impartial bodies to be made publicly available?; (P24.1) Are the decisions of the last three environmental or natural resource cases decided by a national court, tribunal or other judicial body available to the public online or at the office of that court, tribunal or body?

### **3.1.10.19 Prompt, effective remedies (Guideline 21) (edi\_gper)**

*Long tag:* qog\_ei\_edi\_gper

*Original tag:* edi\_gper

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:**Non-missing observations in original unit:* Sum: 70, Percent: 0.57*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23*Lost observations in chosen unit:* Sum: 1 Percent: 1.43*Description:*

The indicator measures to which extent the states provide a framework for prompt, adequate and effective remedies in cases relating to the environment, such as interim and final injunctive relief.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (21.1) To what extent does the law require adequate and effective remedies in cases relating to the environment?; (21.2) To what extent does the law require remedies in cases relating to the environment to be provided promptly?; (21.3) To what extent is interim and/or final injunctive relief available under the law?; (21.4) To what extent is compensation available as a remedy under the law?; (21.5) To what extent is restitution available as a remedy under the law?; (21.6) To what extent is restoration of the environment available as a remedy under the law?; (P21.1) In the last 5 years, have there been injunctions/stay orders/interdicts issued by a court, tribunal or other judicial body in environmental or natural resource cases?

**3.1.10.20 Public participation appeals (Guideline 16) (edi\_gppa)***Long tag:* qog\_ei\_edi\_gppa*Original tag:* edi\_gppa*Dataset citation:* Povitkina et al. (2021)*Variable citation:* World Resource Institute & the Access Initiative (2015)*Merge scores:**Non-missing observations in original unit:* Sum: 70, Percent: 0.57*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23*Lost observations in chosen unit:* Sum: 1 Percent: 1.43*Description:*

The indicator measures to which extent the states ensure that the members of the public concerned have access to a court of law or other independent and impartial body to challenge the substantive and procedural legality of any decision, act or omission relating to public participation in decision-making in environmental matters.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (16.1) To what extent does the law entitle members of the public concerned to challenge the substantive legality of any decision, act or omission relating to decision-making in environmental matters which is subject to public participation?; (16.2) To what extent does the law entitle members of the public concerned to challenge the procedural legality of any decision, act or omission relating to decision-making in environmental matters subject to public participation?; (16.3) To what extent does the law require that a court of law or other independent and impartial body hear challenges to substantive and/or procedural legality?; (P16.1) In the last 5 years, have public interest environmental or natural resource cases been filed before a court, tribunal or other body? If court records are not public information, check media reports.

**3.1.10.21 Proactive public consultation (Guideline 9) (edi\_gppc)***Long tag:* qog\_ei\_edi\_gppc*Original tag:* edi\_gppc*Dataset citation:* Povitkina et al. (2021)*Variable citation:* World Resource Institute & the Access Initiative (2015)*Merge scores:**Non-missing observations in original unit:* Sum: 70, Percent: 0.57*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states make efforts to seek proactively public participation in a transparent and consultative manner, including efforts to ensure that members of the public concerned are given an adequate opportunity to express their views.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (9.1) To what extent do the laws concerning environmental impact assessments, pollution control permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making obligate the State or state agencies at the national level to proactively seek public participation?; (9.2) To what extent do the laws concerning: environmental impact assessments, pollution control permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making obligate the State or State agencies at the national level to give members of the public concerned an adequate opportunity to express their views?

### **3.1.10.22 Public participation review (Guideline 12) (edi\_gppr)**

*Long tag:* qog\_ei\_edi\_gppr

*Original tag:* edi\_gppr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that when a review process is carried out where previously unconsidered environmentally significant issues or circumstances have arisen, the public should be able to participate in any such review process to the extent that circumstances permit.

This indicator is an arithmetic average of expert answers to question on a scale from 0 (worst) to 3 (best): (12.1) To what extent do the laws concerning: environmental impact assessments, pollution control standards and permits, forest concessions, extractive industries, biodiversity and terrestrial protected areas, and environmental policy-making require the State or state agencies to provide for a public review process for decisions relating to the environment if previously unconsidered environmental impacts become apparent?

### **3.1.10.23 Right of public to challenge state or private actors (Guideline 17) (edi\_grpcspa)**

*Long tag:* qog\_ei\_edi\_grpcspa

*Original tag:* edi\_grpcspa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states ensure that the members of the public concerned have access to a court of law or other independent and impartial body or administrative procedures to challenge any decision, act or omission by public authorities or private actors that affects the environment or allegedly violates the substantive or procedural



legal norms of the State related to the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (17.1) To what extent does the law give rights to the public concerned to challenge any decision, act or omission by public authorities that allegedly violates the procedural legal norms of the state relating to the environment?; (17.2) To what extent does the law give rights to the public concerned to challenge any decision, act or omission by private actors that allegedly violates the substantive legal norms of the state relating to the environment?; (17.3) To what extent does the law give rights to the public concerned to challenge any decision, act or omission by private actors that allegedly violates the procedural legal norms of the State relating to the environment?; (17.4) To what extent does the law require the challenges referred to in indicators 1-3 to be heard by an independent and impartial body?; (P17.1) Have there been cases in the last 5 years when civil society filed a lawsuit against a polluter in a national court?; (P17.2) Have there been cases in the last 5 years when civil society filed a lawsuit in a national court challenging a government decision, policy, or rule affecting the environment?

#### **3.1.10.24 State of the environment report (Guideline 5) (edi\_gser)**

*Long tag:* qog\_ei\_edi\_gser

*Original tag:* edi\_gser

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The indicator measures to which extent the states periodically prepare and disseminate at reasonable intervals up-to-date information on the state of the environment, including information on its quality and on pressures on the environment.

This indicator is an arithmetic average of expert answers to questions on a scale from 0 (worst) to 3 (best): (5.1) To what extent does the law mandate the government to publish reports on the state of the environment (i.e. a State of the Environment report)?; (5.2) To what extent does the law require the publication of a State of the Environment report to be periodic at reasonable intervals?; (5.3) Does the law require the report to be comprehensive in the information that it provides?; (5.4) To what extent does the law require the report to contain up-to date information?; (P5.1) In the last 10 years has a national government agency regularly published State of the Environment Reports? (Regular is at fixed intervals of five years or less)

#### **3.1.10.25 Justice Pillar Score (edi\_jp)**

*Long tag:* qog\_ei\_edi\_jp

*Original tag:* edi\_jp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The Justice Pillar Score combines guidelines *Information request*, *Public participation*, *Right of public to challenge state or private actors*, *Broad standing*, *Fair, timely, and independent review*, and *Affordable access to*

relief and remedy"", ""Prompt, effective remedies"", ""Effective enforcement"", ""Awareness and education about remedies and relief"", ""Public access to judicial and administrative decisions"", and ""Alternative dispute resolution for environmental issues"", using an arithmetic average on a scale from 0 (worst) to 3 (best).

### 3.1.10.26 Access to Information Pillar Score (edi\_pati)

*Long tag:* qog\_ei\_edi\_pati

*Original tag:* edi\_pati

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The Access to Information Pillar Score combines guidelines ""Accessibility of information requests"", ""Environmental information in the public domain"", ""Ground for refusal"", ""Information collection and management"", ""State of the environment report"", and ""Early warning information"", using an arithmetic average on a scale from 0 (worst) to 3 (best).

### 3.1.10.27 Participation Pillar Score (edi\_pp)

*Long tag:* qog\_ei\_edi\_pp

*Original tag:* edi\_pp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Resource Institute & the Access Initiative (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 70, Percent: 0.57

*Non-missing observations in chosen unit:* Sum: 69, Percent: 0.23

*Lost observations in chosen unit:* Sum: 1 Percent: 1.43

*Description:*

The Participation Pillar Score combines guidelines ""Early public participation"", ""Proactive public consultation"", ""Informed participation"", ""Due account of public comments"", ""Public participation review"", and ""Integrating public input for rule-making"", using an arithmetic average on a scale from 0 (worst) to 3 (best).

## 3.1.11 Global Footprint Data

Dataset by: Global Footprint Network The National Footprint Accounts (NFAs) measure the ecological resource use and resource capacity of nations over time. Based on approximately 15,000 data points per country per year, the Accounts calculate the Footprints of 232 countries, territories, and regions from 1961 to the present, providing the core data needed for all Ecological Footprint analysis worldwide. Link to the original source: [http://www.footprintnetwork.org/en/index.php/GFN/page/footprint\\_data\\_and\\_results/](http://www.footprintnetwork.org/en/index.php/GFN/page/footprint_data_and_results/)

### 3.1.11.1 Biocapacity Per Person (gha per capita) (ef\_bcpc)

*Long tag:* qog\_ei\_ef\_bcpc

*Original tag:* ef\_bcpc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8301, Percent: 67.17

*Non-missing observations in chosen unit:* Sum: 7696, Percent: 25.83

*Lost observations in chosen unit:* Sum: 605 Percent: 7.29

*Description:*

Total biocapacity divided by the population size. Units are global hectares (gha) per capita.

### 3.1.11.2 Total Biocapacity (total gha) (ef\_bct)

*Long tag:* qog\_ei\_ef\_bct

*Original tag:* ef\_bct

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8303, Percent: 67.19

*Non-missing observations in chosen unit:* Sum: 7697, Percent: 25.83

*Lost observations in chosen unit:* Sum: 606 Percent: 7.3

*Description:*

Biocapacity is the capacity of ecosystems to regenerate what people demand from those surfaces. It is an aggregate measure of the amount of area available, weighted by the productivity of that area. Biocapacity is therefore the ecosystems' capacity to produce biological materials used by people and to absorb waste material generated by humans, under current management schemes and extraction technologies. Biocapacity is calculated by multiplying the physical area by the yield factor and the appropriate equivalence factor. It is expressed in global hectares (gha).

### 3.1.11.3 Built-up land Footprint of consumption (gha per person) (ef\_bul)

*Long tag:* qog\_ei\_ef\_bul

*Original tag:* ef\_bul

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The built-up land footprint is calculated based on the area of land covered by human infrastructure: transportation, housing, and industrial structures. Built-up land may occupy what would previously have been cropland. Measured in global hectares (gha) per person.

### 3.1.11.4 Built-up land biocapacity per capita (ef\_bul\_bc)

*Long tag:* qog\_ei\_ef\_bul\_bc

*Original tag:* ef\_bul\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

Built-up land biocapacity measures how much of the regenerative capacity is occupied by infrastructure (built-up land). Regenerative capacity is an aggregate measure of the amount of area available, weighted by the productivity of that area. It represents the ability of a biosphere to produce crops, livestock (pasture), timber products (forest), and seafood as well as the biosphere's ability to uptake CO<sub>2</sub> in forests. The measure of built-up land biocapacity is divided by the population size.

#### 3.1.11.5 Built-up land Footprint of production (gha per person) (ef\_bulp)

*Long tag:* qog\_ei\_ef\_bulp

*Original tag:* ef\_bulp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The country's built-up area (roads, factories, cities), divided by the population size. The measurement units are global hectares (gha) per person.

#### 3.1.11.6 Carbon Footprint of consumption (gha per person) (ef\_carb)

*Long tag:* qog\_ei\_ef\_carb

*Original tag:* ef\_carb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The carbon footprint measures CO<sub>2</sub> emissions associated with fossil fuel use (burning fossil fuels and the embodied carbon in imported goods). The carbon footprint component is represented by the area of biologically productive land necessary for absorbing these carbon emissions. Currently, the carbon footprint is the largest portion of humanity's footprint. It is expressed in global hectares (gha) per person.

#### 3.1.11.7 Carbon biocapacity per capita (ef\_carb\_bc)

*Long tag:* qog\_ei\_ef\_carb\_bc

*Original tag:* ef\_carb\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The biosphere's ability to uptake CO<sub>2</sub>, divided by the population size.

#### 3.1.11.8 Carbon Footprint of production (gha per person) (ef\_carbp)

*Long tag:* qog\_ei\_ef\_carbp

*Original tag:* ef\_carbp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The area needed to absorb all fossil fuel carbon emissions generated within the country, divided by the population size. The measurement units are global hectares (gha) per capita.

### 3.1.11.9 Cropland footprint of consumption (gha per person) (ef\_crop)

*Long tag:* qog\_ei\_ef\_crop

*Original tag:* ef\_crop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6202, Percent: 50.19

*Non-missing observations in chosen unit:* Sum: 5856, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

Cropland is the most bioproductive of all the land-use types and consists of areas used to produce food and fibre for human consumption, feed for livestock, oil crops, and rubber. The cropland footprint includes crop products allocated to livestock and aquaculture feed mixes, and those used for fibres and materials. Due to lack of globally consistent data sets, current cropland footprint calculations do not yet take into account the extent to which farming techniques or unsustainable agricultural practices may cause long-term degradation of soil.

### 3.1.11.10 Cropland biocapacity per capita (ef\_crop\_bc)

*Long tag:* qog\_ei\_ef\_crop\_bc

*Original tag:* ef\_crop\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The ability of a biosphere to produce crops (the total cropland area available, weighted by the productivity of this area), divided by the population size.

### 3.1.11.11 Cropland Footprint of production (gha per person) (ef\_cropp)

*Long tag:* qog\_ei\_ef\_cropp

*Original tag:* ef\_cropp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The area within a country necessary for supporting the harvest of primary products on the cropland. The indicator is divided by the population size and is measured in global hectares (gha) per capita.

#### **3.1.11.12 Ecological Footprint of Consumption Per Person (gha per person) (ef\_ef)**

*Long tag:* qog\_ei\_ef\_ef

*Original tag:* ef\_ef

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8301, Percent: 67.17

*Non-missing observations in chosen unit:* Sum: 7696, Percent: 25.83

*Lost observations in chosen unit:* Sum: 605 Percent: 7.29

*Description:*

Total ecological footprint of consumption divided by the population size. Measured in global hectares (gha) per person.

#### **3.1.11.13 Ecological Footprint of Production Footprint (gha per person) (ef\_efp)**

*Long tag:* qog\_ei\_ef\_efp

*Original tag:* ef\_efp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8301, Percent: 67.17

*Non-missing observations in chosen unit:* Sum: 7696, Percent: 25.83

*Lost observations in chosen unit:* Sum: 605 Percent: 7.29

*Description:*

Total Ecological Footprint of production divided by the population size. The units are global hectares (gha) per capita.

#### **3.1.11.14 Total Ecological Footprint of Consumption (total area) (ef\_eft)**

*Long tag:* qog\_ei\_ef\_eft

*Original tag:* ef\_eft

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8302, Percent: 67.18

*Non-missing observations in chosen unit:* Sum: 7696, Percent: 25.83

*Lost observations in chosen unit:* Sum: 606 Percent: 7.3

*Description:*

The total Ecological Footprint of consumption is measured in global hectares (gha) and includes the area needed to produce the materials consumed and the area needed to absorb the carbon dioxide emissions. The consumption Footprint of a nation is calculated as a nation's primary production Footprint plus the Footprint of imports minus the Footprint of exports.

For example, if a country grows cotton for export, the ecological resources required are not included in that country's consumption Footprint. Rather, they are included in the consumption Footprint of the country that imports the T-shirts. However, these ecological resources are included in the exporting country's primary production Footprint.

**3.1.11.15 Total Ecological Footprint of Production (total area) (ef\_eftp)***Long tag:* qog\_ei\_ef\_eftp*Original tag:* ef\_eftp*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Global Footprint Network (2019)*Merge scores:**Non-missing observations in original unit:* Sum: 8302, Percent: 67.18*Non-missing observations in chosen unit:* Sum: 7696, Percent: 25.83*Lost observations in chosen unit:* Sum: 606 Percent: 7.3*Description:*

A nation's productive Footprint is the sum of the Footprints for all of the resources harvested and all of the waste generated within the defined geographical region. This includes all the area within a country necessary for supporting the actual harvest of primary products (cropland, pasture land, forestland, and fishing grounds), the country's built-up area (roads, factories, cities), and the area needed to absorb all fossil fuel carbon emissions generated within the country. If a country grows a crop for export, it is included in the ecological footprint of production of this country and the ecological footprint of consumption of the importing country. The indicator is measured in global hectares (gha).

**3.1.11.16 Fish Footprint of consumption (gha per person) (ef\_fg)***Long tag:* qog\_ei\_ef\_fg*Original tag:* ef\_fg*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Global Footprint Network (2019)*Merge scores:**Non-missing observations in original unit:* Sum: 6201, Percent: 50.18*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65*Lost observations in chosen unit:* Sum: 346 Percent: 5.58*Description:*

The fishing grounds footprint is calculated based on estimates of the maximum sustainable catch for a variety of fish species. These sustainable catch estimates are converted into an equivalent mass of primary production based on the various species' trophic levels. This estimate of maximum harvestable primary production is then divided amongst the continental shelf areas of the world. Fish caught and used in aquaculture feed mixes are included. Measured in global hectares (gha) per person.

**3.1.11.17 Fishing ground biocapacity per capita (ef\_fg\_bc)***Long tag:* qog\_ei\_ef\_fg\_bc*Original tag:* ef\_fg\_bc*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Global Footprint Network (2019)*Merge scores:**Non-missing observations in original unit:* Sum: 6201, Percent: 50.18*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65*Lost observations in chosen unit:* Sum: 346 Percent: 5.58*Description:*

The ability of a biosphere to produce seafood (the amount of fishing grounds available, weighted by the productivity of fishing grounds). The measure is divided by the population size.

**3.1.11.18 Fish Footprint of production (gha per person) (ef\_fgp)***Long tag:* qog\_ei\_ef\_fgp

*Original tag:* ef\_fg

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The area within a country necessary for supporting the harvest of primary products on fishing grounds. The indicator is divided by the population size and is measured in global hectares (gha) per capita.

### **3.1.11.19 Forest product Footprint of consumption (gha per person) (ef\_for)**

*Long tag:* qog\_ei\_ef\_for

*Original tag:* ef\_for

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The forest product footprint is calculated based on the amount of lumber, pulp, timber products, and fuel wood consumed by a population on a yearly basis. Measured in global hectares (gha) per person.

### **3.1.11.20 Forest land biocapacity per capita (ef\_for\_bc)**

*Long tag:* qog\_ei\_ef\_for\_bc

*Original tag:* ef\_for\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The ability of a biosphere to produce timber products (the total forest area available, weighted by the productivity of this area), divided by the population size.

### **3.1.11.21 Forest product Footprint of production (gha per person) (ef\_forp)**

*Long tag:* qog\_ei\_ef\_forp

*Original tag:* ef\_forp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

Forest Footprint represents the area necessary to regenerate all the timber harvested (hence,



depending on harvest rates, this area can be bigger or smaller than the forest area that exists within the country). The indicator is divided by the population size and measured in global hectares (gha) per person.

### 3.1.11.22 Grazing Footprint of consumption (gha per person) (ef\_gl)

*Long tag:* qog\_ei\_ef\_gl

*Original tag:* ef\_gl

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6202, Percent: 50.19

*Non-missing observations in chosen unit:* Sum: 5856, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

Grazing land is used to raise livestock for meat, dairy, hide, and wool products. The grazing land footprint is calculated by comparing the amount of livestock feed available in a country with the amount of feed required for all livestock in that year, with the remainder of feed demand assumed to come from grazing land. Measured in global hectares (gha) per person.

### 3.1.11.23 Grazing land biocapacity per capita (ef\_gl\_bc)

*Long tag:* qog\_ei\_ef\_gl\_bc

*Original tag:* ef\_gl\_bc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The ability of a biosphere to produce pasture lands (the total pasture area available, weighted by the productivity/yield of these pastures), divided by the population size.

### 3.1.11.24 Grazing Footprint of production (gha per person) (ef\_glp)

*Long tag:* qog\_ei\_ef\_glp

*Original tag:* ef\_glp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Global Footprint Network (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 6201, Percent: 50.18

*Non-missing observations in chosen unit:* Sum: 5855, Percent: 19.65

*Lost observations in chosen unit:* Sum: 346 Percent: 5.58

*Description:*

The area within a country necessary for supporting the harvest of primary products on pastures. The indicator is divided by the population size and measured in global hectares (gha) per person.

## 3.1.12 Environmental Ministries

Dataset by: Michaël Aklin and Johannes Urpelainen Data on the establishment of environmental ministries from the article: Aklin, M. and Urpelainen, J., 2014. The global spread of environmental ministries: domesticinternational interactions. *International Studies Quarterly*, 58(4), pp.764-780.

Link to the original source: <https://academic.oup.com/isq/article/58/4/764/1815756?login=true>

### 3.1.12.1 Environmental ministry establishment (em\_envmin)

*Long tag:* qog\_ei\_em\_envmin

*Original tag:* em\_envmin

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Aklin & Urpelainen (2014)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7900, Percent: 63.93

*Non-missing observations in chosen unit:* Sum: 7287, Percent: 24.46

*Lost observations in chosen unit:* Sum: 613 Percent: 7.76

*Description:*

Environmental ministry onset. The variable is coded "1" on the year when a national environmental ministry got established. For the rest of the years, the variable is coded "0". The authors expanded temporal and spatial coverage of the data initially published in the article:

Busch, P.O. and Jörgens, H., 2005. The international sources of policy convergence: explaining the spread of environmental policy innovations. *Journal of European public policy*, 12(5), pp.860-884.

### 3.1.13 Emergency Events Database

Dataset by: Centre for Research on the Epidemiology of Disasters EM-DAT is a global database on natural and technological disasters, containing essential core data on the occurrence and effects of more than 21,000 disasters in the world, from 1900 to present. EM-DAT is maintained by the Centre for Research on the Epidemiology of Disasters (CRED) at the School of Public Health of the Université catholique de Louvain located in Brussels, Belgium. The database is made up of information from various sources, including UN agencies, non-governmental organizations, insurance companies, research institutes, and press agencies. Priority is given to data from UN agencies, governments, and the International Federation of Red Cross and Red Crescent Societies. This prioritization is not only a reflection of the quality or value of the data, it also reflects the fact that most reporting sources do not cover all disasters or have political limitations that could affect the figures. The entries are constantly reviewed for inconsistencies, redundancy, and incompleteness. CRED consolidates and updates data on a daily basis. A further check is made at monthly intervals, and revisions are made at the end of each calendar year. EM-DAT distinguishes between two generic categories for disasters: natural and technological. The natural disaster category is divided into 5 sub-groups - geophysical (e.g., earthquakes), meteorological (e.g., extreme temperature), hydrological (e.g., flood), climatological (e.g., drought), biological (e.g., epidemic), and extraterrestrial (e.g., asteroids). The 5 sub-groups in turn cover 15 disaster types and more than 30 sub-types. The technological disaster category is divided into 3 sub-groups - industrial, transport, and miscellaneous accidents, - which in turn cover 15 disaster types. For a disaster to be entered into the database at least one of the following criteria must be fulfilled: a) Ten (10) or more people reported killed; b) Hundred (100) or more people reported affected; c) Declaration of a state of emergency; d) Call for international assistance. Link to the original source: <https://www.emdat.be/>

#### 3.1.13.1 Total damage from natural disasters in USD (emdat\_damage)

*Long tag:* qog\_ei\_emdat\_damage

*Original tag:* emdat\_damage

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

The amount of damage to property, crops, and livestock from natural disasters. The value of estimated damage is given in thousands of US dollars. For each natural disaster, the registered number corresponds to the damage value at the moment of the event, i.e. the figures are shown true to the year of the event (do not include expenses that extended to the following years).

### **3.1.13.2 Number of people affected by natural disasters (emdat\_naffect)**

*Long tag:* qog\_ei\_emdat\_naffect

*Original tag:* emdat\_naffect

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

The number of people requiring immediate assistance during a period of emergency after a natural disasters, i.e. requiring basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance.

### **3.1.13.3 Number of people killed by natural disasters (emdat\_ndeath)**

*Long tag:* qog\_ei\_emdat\_ndeath

*Original tag:* emdat\_ndeath

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

The number of people who lost their lives because the natural hazard happened and people whose whereabouts since the natural disaster is unknown, and who are presumed dead (official figure when available).

### **3.1.13.4 Number of natural disasters (emdat\_ndis)**

*Long tag:* qog\_ei\_emdat\_ndis

*Original tag:* emdat\_ndis

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

Total number of natural disasters occurring per country per year. Natural disasters that last more than one year or begin at the end of the year and last into the next are counted at the year of their first occurrence.

### **3.1.13.5 Number of homeless people after natural disaster (emdat\_nhome)**

*Long tag:* qog\_ei\_emdat\_nhome

*Original tag:* emdat\_nhome

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

The number of people whose house is destroyed or heavily damaged and therefore need shelter after a natural disaster.

### **3.1.13.6 Number of people injured in natural disasters (emdat\_ninj)**

*Long tag:* qog\_ei\_emdat\_ninj

*Original tag:* emdat\_ninj

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

The number of people suffering from physical injuries, trauma or an illness requiring immediate medical assistance as a direct result of a natural disaster.

### **3.1.13.7 Number of affected (total) by natural disasters (emdat\_ntotaff)**

*Long tag:* qog\_ei\_emdat\_ntotaff

*Original tag:* emdat\_ntotaff

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Guha-Sapir (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5098, Percent: 41.25

*Non-missing observations in chosen unit:* Sum: 4787, Percent: 16.07

*Lost observations in chosen unit:* Sum: 311 Percent: 6.1

*Description:*

Sum of people injured, homeless, and affected as a result of natural disasters.

### **3.1.14 Environmental Non-Governmental Organizations**

Dataset by: Thomas Bernauer, Tobias Böhmelt, and Vally Koubi Data on environmental non-governmental organizations used in the article: Bernauer, T., Böhmelt, T. and Koubi, V., 2013. Is there a democracy/civil society paradox in global environmental governance? *Global Environmental Politics*, 13(1), pp.88-107. Link to the original source: <https://ib.ethz.ch/data/civilsoc.html>

#### **3.1.14.1 Number of national ENGOs (engo\_nengo)**

*Long tag:* qog\_ei\_engo\_nengo

*Original tag:* engo\_nengo

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Bernauer et al. (2013)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3514, Percent: 28.44

*Non-missing observations in chosen unit:* Sum: 3333, Percent: 11.19

*Lost observations in chosen unit:* Sum: 181 Percent: 5.15

*Description:*

National environmental non-governmental organizations (ENGOS) registered in a country.

The data on registered national ENGOS comes from the archives of the International Union for Conservation of Nature (IUCN) for the time period 1973-2006 from 181 countries. While the IUCN covers most countries, it is an umbrella organization where membership is not mandatory and ENGOS do not have to register. As a result, some ENGOS that have not registered with the IUCN may have been omitted. Therefore the variable becomes a proxy for the political leverage of ENGOS.

### 3.1.15 ENVIPOLCON

Dataset by: Holzinger, Knill, Sommerer ENVIPOLCON is the acronym of "Environmental governance in Europe: the impact of international institutions and trade on policy convergence". The project was carried out between 2003 and 2006 by the University of Konstanz, University of Hamburg, Germany, Free University of Berlin, University of Salzburg, and Radboud University Nijmegen. The project was supported by the EU, RTD programme "Improving the human research potential and the socioeconomic knowledge base", contract no. HPSE-CT-2002-00103. This compilation only includes data on policy instrument adoption from ENVIPOLCON. Each of the instrument variables is coded with scores ranging from 1= obligatory standard to 10 = voluntary instrument. 0 = no instrument because no policy was in place yet. For the variable on the promotion of renewable energy (e.g. ener\_i7) the additional instrument "legal obligation to purchase that electricity" was coded as = 11. Other variables from ENVIPOLCON are included into the extension of the dataset - ENVIPOLCONCHANGE, which is also a part of this compilation. Link to the original source: <https://www.polver.uni-konstanz.de/holzinger/research/researchprojects/enviromental-policy-convergence-in-europe-envipolcon/>

#### 3.1.15.1 Policy instruments for quality of bathing water (epc\_bath)

*Long tag:* qog\_ei\_epc\_bath

*Original tag:* epc\_bath

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on quality of bathing water. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

- 0 = 'No policy'
- 1 = 'Obligatory standard, prohibition or ban'
- 2 = 'Technological prescription'
- 3 = 'Tax or levy'
- 4 = 'Subsidy or tax reduction'
- 5 = 'Liability scheme(s)'
- 6 = 'Planning instrument'
- 7 = 'Public investment'
- 8 = 'Data collection / monitoring programme(s)'
- 9 = 'Information based instrument'
- 10 = 'Voluntary instrument'

**3.1.15.2 Policy instruments for exhaust emissions from cars (epc\_car)**

*Long tag:* qog\_ei\_epc\_car

*Original tag:* epc\_car

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on exhaust emissions from cars. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

**3.1.15.3 Policy instruments for reduction of CO2 emissions from heavy industry (epc\_co2)**

*Long tag:* qog\_ei\_epc\_co2

*Original tag:* epc\_co2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on reduction of CO2 emissions from heavy industry. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

**3.1.15.4 Policy instruments for hazardous substances in detergents (epc\_dete)***Long tag:* qog\_ei\_epc\_dete*Original tag:* epc\_dete*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Heichel et al. (2008)*Merge scores:**Non-missing observations in original unit:* Sum: 93, Percent: 0.75*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

Policy instruments on hazardous substances in detergents. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

**3.1.15.5 Policy instruments for energy efficiency of refrigerators (epc\_enef)***Long tag:* qog\_ei\_epc\_enef*Original tag:* epc\_enef*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Heichel et al. (2008)*Merge scores:**Non-missing observations in original unit:* Sum: 93, Percent: 0.75*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

Policy instruments on energy efficiency of refrigerators. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

**3.1.15.6 Policy instruments for electricity from renewable sources (epc\_ener)**

*Long tag:* qog\_ei\_epc\_ener

*Original tag:* epc\_ener

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on electricity production from renewable sources. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'

11 = 'Extra instrument for energy'.

### 3.1.15.7 Policy instruments for forest protection policy (epc\_fors)

*Long tag:* qog\_ei\_epc\_fors

*Original tag:* epc\_fors

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on forest protection. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

### 3.1.15.8 Policy instruments for lead emissions from vehicles (epc\_lead)



*Long tag:* qog\_ei\_epc\_lead

*Original tag:* epc\_lead

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on lead emissions from vehicles. The variable measure the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

### 3.1.15.9 Policy instruments for noise emissions from lorries (epc\_nois)

*Long tag:* qog\_ei\_epc\_nois

*Original tag:* epc\_nois

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on noise emission from lorries. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

### 3.1.15.10 Policy instruments to promote refillable beverage containers (epc\_pawa)

*Long tag:* qog\_ei\_epc\_pawa

*Original tag:* epc\_pawa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments to promote refillable beverage containers. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

- 0 = 'No policy'
- 1 = 'Obligatory standard, prohibition or ban'
- 2 = 'Technological prescription'
- 3 = 'Tax or levy'
- 4 = 'Subsidy or tax reduction'
- 5 = 'Liability scheme(s)'
- 6 = 'Planning instrument'
- 7 = 'Public investment'
- 8 = 'Data collection / monitoring programme(s)'
- 9 = 'Information based instrument'
- 10 = 'Voluntary instrument'.

### 3.1.15.11 Policy instruments for contaminated sites (epc\_soil)

*Long tag:* qog\_ei\_epc\_soil

*Original tag:* epc\_soil

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on contaminated sites. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

- 0 = 'No policy'
- 1 = 'Obligatory standard, prohibition or ban'
- 2 = 'Technological prescription'
- 3 = 'Tax or levy'
- 4 = 'Subsidy or tax reduction'
- 5 = 'Liability scheme(s)'
- 6 = 'Planning instrument'
- 7 = 'Public investment'
- 8 = 'Data collection / monitoring programme(s)'
- 9 = 'Information based instrument'
- 10 = 'Voluntary instrument'.

### 3.1.15.12 Policy instruments for water protection related to industrial discharges (epc\_watp)

*Long tag:* qog\_ei\_epc\_watp

*Original tag:* epc\_watp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Heichel et al. (2008)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 93, Percent: 0.75

*Non-missing observations in chosen unit:* Sum: 93, Percent: 0.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Policy instruments on industrial discharges into water bodies. The variable measures the presence of a policy instrument in 1970, 1980, 1990, and 2000.

Variable coding:

0 = 'No policy'

1 = 'Obligatory standard, prohibition or ban'

2 = 'Technological prescription'

3 = 'Tax or levy'

4 = 'Subsidy or tax reduction'

5 = 'Liability scheme(s)'

6 = 'Planning instrument'

7 = 'Public investment'

8 = 'Data collection / monitoring programme(s)'

9 = 'Information based instrument'

10 = 'Voluntary instrument'.

### 3.1.16 ENVIPOLCONCHANGE

Dataset by: Holzinger, Knill, Sommerer The Dataset "ENVIPOLCONCHANGE (Environmental Policy Change). A dataset on environmental regulations in 24 OECD countries from 1970 to 2005" has been collected by the ENVIPOLCON group at the University of Konstanz (Stephan Heichel, Katharina Holzinger, Christoph Knill, Thomas Sommerer) in 2009. Data collection was funded by the German Research Foundation DFG. Link to the original source: <https://www.polver.uni-konstanz.de/holzinger/research/researchprojects/policy-wandel-in-der-umweltpolitik-der-einfluss-von-nationalen-vetospielernund-transnationalem-p-der-datensatz-environmental-policy-change-envipolchange/>

#### 3.1.16.1 Change in eco audit policy (epcc\_audi\_ch2)

*Long tag:* qog\_ei\_epcc\_audi\_ch2

*Original tag:* epcc\_audi\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for eco-audit in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

#### 3.1.16.2 Eco audit policy introduction (epcc\_audi\_in2)

*Long tag:* qog\_ei\_epcc\_audi\_in2

*Original tag:* epcc\_audi\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for eco-audit. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### 3.1.16.3 Change in coliforms in bathing water policy (epcc\_bath\_ch2)

*Long tag:* qog\_ei\_epcc\_bath\_ch2

*Original tag:* epcc\_bath\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for the quality of bathing water in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

### 3.1.16.4 Coliforms in bathing water policy introduction (epcc\_bath\_in2)

*Long tag:* qog\_ei\_epcc\_bath\_in2

*Original tag:* epcc\_bath\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for quality of bathing water. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### 3.1.16.5 Passenger car emissions CO regulatory level (epcc\_car\_co)

*Long tag:* qog\_ei\_epcc\_car\_co

*Original tag:* epcc\_car\_co

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 595, Percent: 4.81

*Non-missing observations in chosen unit:* Sum: 595, Percent: 2

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for CO emissions in g/km, adjusted.

#### 3.1.16.6 Passenger car emissions HC regulatory level (epcc\_car\_hc)

*Long tag:* qog\_ei\_epcc\_car\_hc

*Original tag:* epcc\_car\_hc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 595, Percent: 4.81

*Non-missing observations in chosen unit:* Sum: 595, Percent: 2

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for HC emissions in g/km, adjusted.

#### 3.1.16.7 Passenger car emissions NOx regulatory level (epcc\_car\_nox)

*Long tag:* qog\_ei\_epcc\_car\_nox

*Original tag:* epcc\_car\_nox

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 525, Percent: 4.25

*Non-missing observations in chosen unit:* Sum: 525, Percent: 1.76

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for NOx emissions in g/km, adjusted.

#### 3.1.16.8 Change in passenger car emissions policy (epcc\_care\_ch2)

*Long tag:* qog\_ei\_epcc\_care\_ch2

*Original tag:* epcc\_care\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for exhaust emissions from cars in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

#### 3.1.16.9 Passenger car emissions policy introduction (epcc\_care\_in2)

*Long tag:* qog\_ei\_epcc\_care\_in2

*Original tag:* epcc\_care\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for exhaust emissions from cars. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### 3.1.16.10 Sum of downward changes in all 17 standards (epcc\_cd\_dwsum)

*Long tag:* qog\_ei\_epcc\_cd\_dwsum

*Original tag:* epcc\_cd\_dwsum

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Sum of downward changes in all 17 variables that measure standards/regulatory levels in the recorded year. Higher score, on average, corresponds to a decrease in policy standards.

### 3.1.16.11 Sum of upward changes in all 17 standards (epcc\_cd\_upsum)

*Long tag:* qog\_ei\_epcc\_cd\_upsum

*Original tag:* epcc\_cd\_upsum

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Sum of all upward changes in the 17 variables that measure standards/regulatory levels included in this dataset in the recorded year. Higher score corresponds to, on average, increased policy standards.

### 3.1.16.12 Cumulative sum of all policy-in-place items (epcc\_ch\_kum)

*Long tag:* qog\_ei\_epcc\_ch\_kum

*Original tag:* epcc\_ch\_kum

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Cumulative sum of all Policy-in-Place variables. Higher score corresponds to a higher number of policies in place.

### 3.1.16.13 Sum of all changes in policy (epcc\_ch2)

*Long tag:* qog\_ei\_epcc\_ch2

*Original tag:* epcc\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Sum of all changes in policies, including introductions, in the recorded year.

### 3.1.16.14 Change in contaminated sites policy (epcc\_cont\_ch2)

*Long tag:* qog\_ei\_epcc\_cont\_ch2

*Original tag:* epcc\_cont\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for contaminated sites in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

### 3.1.16.15 Contaminated sites policy introduction (epcc\_cont\_in2)

*Long tag:* qog\_ei\_epcc\_cont\_in2

*Original tag:* epcc\_cont\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for contaminated sites. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### 3.1.16.16 Change in recycling of construction waste policy (epcc\_cowa\_ch2)

*Long tag:* qog\_ei\_epcc\_cowa\_ch2

*Original tag:* epcc\_cowa\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for recycling construction waste in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and

quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.17 Recycling of construction waste policy introduction (epcc\_cowa\_in2)**

*Long tag:* qog\_ei\_epcc\_cowa\_in2

*Original tag:* epcc\_cowa\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for recycling of construction waste. This is a binary variable, where quot;quot;1quot;quot; is assigned to the year when the policy was first introduced and quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.18 Change in detergents regulation policy (epcc\_dete\_ch2)**

*Long tag:* qog\_ei\_epcc\_dete\_ch2

*Original tag:* epcc\_dete\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for hazardous substances in detergents in the recorded year. This is a binary variable, where quot;quot;1quot;quot; is assigned to the year when there was a change in the policy, including its first introduction, and quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.19 Detergents regulation policy introduction (epcc\_dete\_in2)**

*Long tag:* qog\_ei\_epcc\_dete\_in2

*Original tag:* epcc\_dete\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for hazardous substances in detergents. This is a binary variable, where quot;quot;1quot;quot; is assigned to the year when the policy was first introduced and quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.20 Change in ecolabel policy (epcc\_ecol\_ch2)**

*Long tag:* qog\_ei\_epcc\_ecol\_ch2

*Original tag:* epcc\_ecol\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)



*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures whether there was a change in the policy for eco-labelling in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.21 Ecolabel policy introduction (epcc\_ecol\_in2)***Long tag:* qog\_ei\_epcc\_ecol\_in2*Original tag:* epcc\_ecol\_in2*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures the first introduction of the policy for eco-labeling. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.22 Change in environmental impact assessment (epcc\_eias\_ch2)***Long tag:* qog\_ei\_epcc\_eias\_ch2*Original tag:* epcc\_eias\_ch2*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures whether there was a change in the policy for environmental impact assessment in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.23 Environmental impact assessment introduction (epcc\_eias\_in2)***Long tag:* qog\_ei\_epcc\_eias\_in2*Original tag:* epcc\_eias\_in2*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures the first introduction of the policy for environmental impact assessment.

This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

#### 3.1.16.24 Change in energy efficiency of refrigerators policy (epcc\_enef\_ch2)

*Long tag:* qog\_ei\_epcc\_enef\_ch2

*Original tag:* epcc\_enef\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for the energy efficiency of refrigerators in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

#### 3.1.16.25 Energy efficiency of refrigerators policy introduction (epcc\_enef\_in2)

*Long tag:* qog\_ei\_epcc\_enef\_in2

*Original tag:* epcc\_enef\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for energy efficiency of refrigerators. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

#### 3.1.16.26 Change in glass recycling target in regulation (epcc\_glas\_ch2)

*Long tag:* qog\_ei\_epcc\_glas\_ch2

*Original tag:* epcc\_glas\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for glass reuse/recycling target in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

#### 3.1.16.27 Glass recycling target in regulation introduction (epcc\_glas\_in2)

*Long tag:* qog\_ei\_epcc\_glas\_in2

*Original tag:* epcc\_glas\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for glass reuse/recycling target. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### 3.1.16.28 Glass recycling target in regulations, percent (epcc\_glas2\_s)

*Long tag:* qog\_ei\_epcc\_glas2\_s

*Original tag:* epcc\_glas2\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 170, Percent: 1.38

*Non-missing observations in chosen unit:* Sum: 170, Percent: 0.57

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Glass reuse/recycling target in percent of total waste generated.

### 3.1.16.29 Sum of first policy introductions (epcc\_intro\_kum)

*Long tag:* qog\_ei\_epcc\_intro\_kum

*Original tag:* epcc\_intro\_kum

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Sum of all variables measuring the first introduction of a policy. Higher number corresponds to a higher number of policies being adopted in the recorded year.

### 3.1.16.30 Change in landfill target in regulations (epcc\_land\_ch2)

*Long tag:* qog\_ei\_epcc\_land\_ch2

*Original tag:* epcc\_land\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for waste landfill target in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.31 Landfill target in regulations introduction (epcc\_lanr\_in2)**

*Long tag:* qog\_ei\_epcc\_lanr\_in2

*Original tag:* epcc\_lanr\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for waste landfill target. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.32 Large combustion plants regulatory level DUST (epcc\_lcp\_dust)**

*Long tag:* qog\_ei\_epcc\_lcp\_dust

*Original tag:* epcc\_lcp\_dust

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 336, Percent: 2.72

*Non-missing observations in chosen unit:* Sum: 336, Percent: 1.13

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for dust from large combustion plants in mg/m<sup>3</sup>.

**3.1.16.33 Large combustion plants regulatory level NOX (epcc\_lcp\_nox)**

*Long tag:* qog\_ei\_epcc\_lcp\_nox

*Original tag:* epcc\_lcp\_nox

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 321, Percent: 2.6

*Non-missing observations in chosen unit:* Sum: 321, Percent: 1.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for NO<sub>x</sub> emissions from large combustion plants in mg/m<sup>3</sup>.

**3.1.16.34 Large combustion plants regulatory level SO2 (epcc\_lcp\_so2)**

*Long tag:* qog\_ei\_epcc\_lcp\_so2

*Original tag:* epcc\_lcp\_so2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 339, Percent: 2.74

*Non-missing observations in chosen unit:* Sum: 339, Percent: 1.14

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for SO<sub>2</sub> emissions from large combustion plants in mg/m<sup>3</sup>.

**3.1.16.35 Change in large combustion plants policy (epcc\_lcpt\_ch2)**

*Long tag:* qog\_ei\_epcc\_lcpt\_ch2

*Original tag:* epcc\_lcpt\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for airborne emissions from large combustion plants in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.36 Large combustion plants policy introduction (epcc\_lcpt\_in2)**

*Long tag:* qog\_ei\_epcc\_lcpt\_in2

*Original tag:* epcc\_lcpt\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for airborne emissions from large combustion plants. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.37 Change lead content in petrol policy (epcc\_lead\_ch2)**

*Long tag:* qog\_ei\_epcc\_lead\_ch2

*Original tag:* epcc\_lead\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for lead emissions from vehicles in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.38 Lead content in petrol policy introduction (epcc\_lead\_in2)**

*Long tag:* qog\_ei\_epcc\_lead\_in2

*Original tag:* epcc\_lead\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures the first introduction of the policy for lead emissions from vehicles. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.39 Lead content in petrol regulatory level (epcc\_lead\_s)***Long tag:* qog\_ei\_epcc\_lead\_s*Original tag:* epcc\_lead\_s*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 642, Percent: 5.2*Non-missing observations in chosen unit:* Sum: 642, Percent: 2.15*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

A limit value for lead content in petrol in g/l.

**3.1.16.40 Change in motorway noise emissions policy (epcc\_moto\_ch2)***Long tag:* qog\_ei\_epcc\_moto\_ch2*Original tag:* epcc\_moto\_ch2*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures whether there was a change in the policy for noise level around motorways in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.41 Motorway noise emissions policy introduction (epcc\_moto\_in2)***Long tag:* qog\_ei\_epcc\_moto\_in2*Original tag:* epcc\_moto\_in2*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Holzinger et al. (2011)*Merge scores:**Non-missing observations in original unit:* Sum: 841, Percent: 6.81*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The variable measures the first introduction of the policy for noise level around motorways. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.42 Motorway noise emissions regulatory level (epcc\_moto\_s)**

*Long tag:* qog\_ei\_epcc\_moto\_s

*Original tag:* epcc\_moto\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 298, Percent: 2.41

*Non-missing observations in chosen unit:* Sum: 298, Percent: 1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Motorway noise emissions standard in decibel (dB (A)).

**3.1.16.43 Change in noise emissions from lorries policy (epcc\_nois\_ch2)**

*Long tag:* qog\_ei\_epcc\_nois\_ch2

*Original tag:* epcc\_nois\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for noise emissions from lorries in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.44 Noise emissions from lorries policy introduction (epcc\_nois\_in2)**

*Long tag:* qog\_ei\_epcc\_nois\_in2

*Original tag:* epcc\_nois\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for noise emissions from lorries. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.45 Noise emissions from lorries regulatory level (epcc\_nois\_s)**

*Long tag:* qog\_ei\_epcc\_nois\_s

*Original tag:* epcc\_nois\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 668, Percent: 5.41

*Non-missing observations in chosen unit:* Sum: 668, Percent: 2.24

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Noise emissions standard from lorries in decibel (dB(a)).

**3.1.16.46 Change in packaging waste recycling target (epcc\_pact\_ch2)**

*Long tag:* qog\_ei\_epcc\_pact\_ch2

*Original tag:* epcc\_pact\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for waste packaging target in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.47 Packaging waste recycling target introduction (epcc\_pact\_in2)**

*Long tag:* qog\_ei\_epcc\_pact\_in2

*Original tag:* epcc\_pact\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for waste packaging target. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.48 Change in paper recycling target in regulation (epcc\_pape\_ch2)**

*Long tag:* qog\_ei\_epcc\_pape\_ch2

*Original tag:* epcc\_pape\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for waste paper reuse/recycling target in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.49 Paper recycling target in regulation introduction (epcc\_pape\_in2)**

*Long tag:* qog\_ei\_epcc\_pape\_in2

*Original tag:* epcc\_pape\_in2



*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for waste paper reuse/recycling target. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### **3.1.16.50 Paper recycling target in regulations, percent (epcc\_pape2\_s)**

*Long tag:* qog\_ei\_epcc\_pape2\_s

*Original tag:* epcc\_pape2\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 178, Percent: 1.44

*Non-missing observations in chosen unit:* Sum: 178, Percent: 0.6

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Waste paper reuse/recycling target in percent of waste generated.

### **3.1.16.51 Change in soil policy (epcc\_soil\_ch2)**

*Long tag:* qog\_ei\_epcc\_soil\_ch2

*Original tag:* epcc\_soil\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the soil policy in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

### **3.1.16.52 Soil policy introduction (epcc\_soil\_in2)**

*Long tag:* qog\_ei\_epcc\_soil\_in2

*Original tag:* epcc\_soil\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the soil policy. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and

quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.53 Change in sulphur content gas oil policy (epcc\_sulp\_ch2)**

*Long tag:* qog\_ei\_epcc\_sulp\_ch2

*Original tag:* epcc\_sulp\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for sulphur content in gas oil in the recorded year. This is a binary variable, where quot;quot;1quot;quot; is assigned to the year when there was a change in the policy, including its first introduction, and quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.54 Sulphur content gas oil policy introduction (epcc\_sulp\_in2)**

*Long tag:* qog\_ei\_epcc\_sulp\_in2

*Original tag:* epcc\_sulp\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for sulphur content in gas oil. This is a binary variable, where quot;quot;1quot;quot; is assigned to the year when the policy was first introduced and quot;quot;0quot;quot; is assigned to all other years.

### **3.1.16.55 Sulphur content in gas oil regulatory level (epcc\_sulp\_s)**

*Long tag:* qog\_ei\_epcc\_sulp\_s

*Original tag:* epcc\_sulp\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 587, Percent: 4.75

*Non-missing observations in chosen unit:* Sum: 587, Percent: 1.97

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for sulphur content in gas oil, as percent per weight.

### **3.1.16.56 Change in National environmental policy/Sustainable development plan (epcc\_susp\_ch2)**

*Long tag:* qog\_ei\_epcc\_susp\_ch2

*Original tag:* epcc\_susp\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for the national environmental policy or sustainable development plan in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.57 National environmental policy/Sustainable development plan introduction (epcc\_susp\_in2)**

*Long tag:* qog\_ei\_epcc\_susp\_in2

*Original tag:* epcc\_susp\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable expresses the first introduction of the policy for the national environmental policy or sustainable development plan. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.58 Water protection - BOD in industrial discharges (epcc\_wabo\_s)**

*Long tag:* qog\_ei\_epcc\_wabo\_s

*Original tag:* epcc\_wabo\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 335, Percent: 2.71

*Non-missing observations in chosen unit:* Sum: 335, Percent: 1.12

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for biochemical oxygen demand (BOD) in industrial discharges in mg/l.

**3.1.16.59 Water protection - Copper in industrial discharges (epcc\_waco\_s)**

*Long tag:* qog\_ei\_epcc\_waco\_s

*Original tag:* epcc\_waco\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 387, Percent: 3.13

*Non-missing observations in chosen unit:* Sum: 387, Percent: 1.3

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for Copper in industrial discharges in mg/l.

**3.1.16.60 Water protection - Chromium in industrial discharges (epcc\_wacr\_s)**

*Long tag:* qog\_ei\_epcc\_wacr\_s

*Original tag:* epcc\_wacr\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 387, Percent: 3.13

*Non-missing observations in chosen unit:* Sum: 387, Percent: 1.3

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for Chromium in industrial discharges in mg/l.

### **3.1.16.61 Change in efficient use of water in industry policy (epcc\_waef\_ch2)**

*Long tag:* qog\_ei\_epcc\_waef\_ch2

*Original tag:* epcc\_waef\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for efficient use of the water industry in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

### **3.1.16.62 Efficient use of water in industry policy introduction (epcc\_waef\_in2)**

*Long tag:* qog\_ei\_epcc\_waef\_in2

*Original tag:* epcc\_waef\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for efficient use of the water industry. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

### **3.1.16.63 Water protection - Lead in industrial discharges (epcc\_wale\_s)**

*Long tag:* qog\_ei\_epcc\_wale\_s

*Original tag:* epcc\_wale\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 405, Percent: 3.28

*Non-missing observations in chosen unit:* Sum: 405, Percent: 1.36

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for Lead in industrial discharges in mg/l.

**3.1.16.64 Change in water protection policy - industrial discharges (epcc\_wapr\_ch2)**

*Long tag:* qog\_ei\_epcc\_wapr\_ch2

*Original tag:* epcc\_wapr\_ch2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures whether there was a change in the policy for water protection in industrial discharges in the recorded year. This is a binary variable, where "1" is assigned to the year when there was a change in the policy, including its first introduction, and "0" is assigned to all other years.

**3.1.16.65 Water protection - industrial discharges introduction (epcc\_wapr\_in2)**

*Long tag:* qog\_ei\_epcc\_wapr\_in2

*Original tag:* epcc\_wapr\_in2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 841, Percent: 6.81

*Non-missing observations in chosen unit:* Sum: 841, Percent: 2.82

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The variable measures the first introduction of the policy for water protection in industrial discharges. This is a binary variable, where "1" is assigned to the year when the policy was first introduced and "0" is assigned to all other years.

**3.1.16.66 Water protection - Zinc in industrial discharges (epcc\_wazi\_s)**

*Long tag:* qog\_ei\_epcc\_wazi\_s

*Original tag:* epcc\_wazi\_s

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Holzinger et al. (2011)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 405, Percent: 3.28

*Non-missing observations in chosen unit:* Sum: 405, Percent: 1.36

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

A limit value for Zinc in industrial discharges in mg/l.

**3.1.17 Environmental Performance Index Data 2020**

Dataset by: Environmental Performance Index The Environmental Performance Index provides a ranking that shines light on how each country manages environmental issues. The Environmental Performance Index (EPI) ranks how well countries perform on high-priority environmental issues in two broad policy areas: protection of human health from environmental harm and protection

of ecosystems. Within these two policy objectives the EPI scores country performance in 11 issue areas comprised of 32 indicators. Indicators in the EPI measure how close countries are to meeting internationally established targets or, in the absence of agreed-upon targets, how they compare to the range of observed countries. Note: In many cases the EPI variables lack actual observations and rely on imputation. Please refer to the original documentation on more information about this. Also, some values (usually the value 0) are very unlikely, please use your judgement whether to treat these as the value 0 or as "Data missing". The values on the EPI, Policy Objectives, and Issue Categories are not comparable over time, therefore, this compilation only includes data on these variables from the latest release. The raw data on the 32 indicators, however, are comparable over time and, therefore, time-series are included. Link to the original source: <https://epi.envirocenter.yale.edu/epi-downloads>

### 3.1.17.1 Agriculture Issue Category (epi\_agr)

*Long tag:* qog\_ei\_epi\_agr

*Original tag:* epi\_agr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Agriculture Issue Category consists of the Sustainable Nitrogen Management Index, which measures the Euclidean distance from an ideal point with optimal nitrogen use efficiency (NUE) and crop yield. The issue category varies from 0 to 100.

### 3.1.17.2 Air Quality Issue Category (epi\_air)

*Long tag:* qog\_ei\_epi\_air

*Original tag:* epi\_air

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Air Quality Issue Category consists of three indicators:

1) Household air pollution (HAP), measured with the number of age-standardized disability-adjusted life-years (DALYs) lost per 100,000 persons due to the health risk posed by the incomplete combustion of solid fuels. It is log-transformed and given 40percent weight in the aggregation.

2) Ambient particulate matter pollution, measured as the PM2.5 exposure using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to fine air particulate matter smaller than 2.5 micrometers (PM2.5). It is log-transformed and given 55percent weight in the aggregation.

3) Ozone exposure, measured by the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to ground-level ozone pollution. It is log-transformed and given 5percent weight in the aggregation.

The issue category varies from 0 to 100.

### 3.1.17.3 Pollution Emissions Issue Category (epi\_ape)

*Long tag:* qog\_ei\_epi\_ape

*Original tag:* epi\_ape

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Pollution Emissions Issue Category consists of 2 indicators:

1) The SO<sub>2</sub> growth rate, calculated as the average annual rate of increase or decrease in SO<sub>2</sub> over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. First, the EPI team calculates Spearman's correlation coefficient between SO<sub>2</sub> emissions and GDP over a ten-year period. Second, they regress logged SO<sub>2</sub> emissions over ten years to find a slope. Third, they calculate an unadjusted average annual growth rate in SO<sub>2</sub> emissions. Fourth, they adjust the negative growth rates by a factor of 1 - the correlation coefficient.

2) The NO<sub>x</sub> growth rate, calculated as the average annual rate of increase or decrease in NO<sub>x</sub> over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. First, the EPI team calculates Spearman's correlation coefficient between NO<sub>x</sub> emissions and GDP over a ten-year period. Second, they regress logged NO<sub>x</sub> emissions over ten years to find a slope. Third, they calculate an unadjusted average annual growth rate in NO<sub>x</sub> emissions. Fourth, they adjust the negative growth rates by a factor of 1 - the correlation coefficient.

Both indicators are given equal weight in the aggregation. The issue category varies from 0 to 100.

### 3.1.17.4 Black carbon growth rate (epi\_bca)

*Long tag:* qog\_ei\_epi\_bca

*Original tag:* epi\_bca

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4755, Percent: 38.48

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 459 Percent: 9.65

*Description:*

The black carbon growth rate, which makes up 5percent of the Climate Change Issue Category, is calculated as the average annual rate of increase or decrease in black carbon over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Community Emissions Data Systems.

When using this variable, please cite both EPI and the original source.

### 3.1.17.5 Biodiversity and Habitat Issue Category (epi\_bdh)

*Long tag:* qog\_ei\_epi\_bdh

*Original tag:* epi\_bdh

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Biodiversity and Habitat Issue Category consists of 7 indicators:

1) The terrestrial biome protection (national weights) indicator. It is calculated by first taking proportions of the area of each of a country's biome types that are covered by protected areas and then constructing a weighted sum of the protection percentages for all biomes within that country. The protection percentages are weighted according to the prevalence of each biome type within that country. This indicator evaluates a country's efforts to achieve 17percent protection for all biomes within its borders, as per Aichi Target 11. It is given 20percent weight in the aggregation.

2) The terrestrial biome protection (global weights) indicator, where protection percentages are weighted according to the global prevalence of each biome type. This indicator evaluates a country's contribution toward the global 17percent protection goal. It is given 20percent weight in the aggregation.

3) The marine protected areas indicator, measured as a percentage of a country's total exclusive economic zone (EEZ) designated as marine protected areas (MPAs). Because each country may have multiple EEZs, the summed area of MPAs is divided by the summed EEZ. It is given 20percent weight in the aggregation.

4) The Protected Areas Representativeness Index (PARI), which measures ecological representativeness as the proportion of biologically scaled environmental diversity included in a country's terrestrial protected areas. The measure relies on remote sensing, biodiversity informatics, and global modeling of fine-scaled variation in biodiversity composition for plant, vertebrate, and invertebrate species. It is given 10percent weight in the aggregation.

5) Species Habitat Index (SHI) estimates potential population losses, as well as regional and global extinction risks of individual species, using habitat loss as a proxy. The SHI indicator measures the proportion of suitable habitat within a country that remains intact for each species in that country relative to a baseline set in the year 2001. It is given 10percent weight in the aggregation.

6) Species Protection Index (SPI) evaluates the species-level ecological representativeness of each country's protected area network. The SPI metric uses remote sensing data, global biodiversity informatics, and integrative models to map suitable habitat for over 30,000 terrestrial vertebrate, invertebrate, and plant species at high resolutions. It is given 10percent weight in the aggregation.

7) The Biodiversity Habitat Index (BHI), which estimates the effects of habitat loss, degradation, and fragmentation on the expected retention of terrestrial biodiversity. It is given 10percent weight in the aggregation.

The issue category varies from 0 to 100.

### **3.1.17.6 Biodiversity habitat index (epi\_bhv)**

*Long tag:* qog\_ei\_epi\_bhv

*Original tag:* epi\_bhv

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)



*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

Biodiversity Habitat Index (BHI) estimates the effects of habitat loss, degradation, and fragmentation on the expected retention of terrestrial biodiversity.

Original source: Commonwealth Scientific and Industrial Research Organization.

When using this variable, please cite both EPI and the original source.

**3.1.17.7 Climate Change Issue Category (epi\_cch)**

*Long tag:* qog\_ei\_epi\_cch

*Original tag:* epi\_cch

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Climate Change Issue Category consists of 8 indicators:

1) The CO<sub>2</sub> growth rate, calculated as the average annual rate of increase or decrease in raw carbon dioxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 55percent weight in the aggregation.

2) The CH<sub>4</sub> growth rate, calculated as the average annual rate of increase or decrease in raw methane emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 15percent weight in the aggregation.

3) The F-gas growth rate, calculated as the average annual rate of increase or decrease in raw fluorinated gas emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 10percent weight in the aggregation.

4) The N<sub>2</sub>O growth rate, calculated as the average annual rate of increase or decrease in raw nitrous oxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 5percent weight in the aggregation.

5) The black carbon growth rate, calculated as the average annual rate of increase or decrease in black carbon over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 5percent weight in the aggregation.

6) Greenhouse gas (GHG) emissions per capita in the year 2017. First, the EPI team calculates total greenhouse gas emissions, applying Global Warming Potentials to convert all units to Gg of CO<sub>2</sub>-equivalents. Second, they calculate GHG emissions per capita (GHP) as the GHG emissions divided by population (POP). It is log-transformed and given 2.5percent weight in the aggregation.

7) CO2 emissions from land cover change, calculated over the years 2001-2015. First, the EPI team regresses logged CO2 emissions from land cover change (LULC) over 15 years to find a slope. Then, they calculate an unadjusted average annual growth rate in these CO2 emissions. It is given 2.5percent weight in the aggregation.

8) The greenhouse gas (GHG) intensity growth rate indicator, which serves as a signal of countries' progress in decoupling emissions from economic growth. The EPI team calculates an annual average growth rate in GHG emissions per unit of GDP over the years 2008-2017. This indicator highlights the need for action on climate change mitigation in countries at all income levels. It is given 5percent weight in the aggregation.

The issue category varies from 0 to 100.

#### **3.1.17.8 CO2 growth rate (epi\_cda)**

*Long tag:* qog\_ei\_epi\_cda

*Original tag:* epi\_cda

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4833, Percent: 39.11

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 537 Percent: 11.11

*Description:*

The CO2 (carbon dioxide) growth rate, which makes up 55percent of the Climate Change Issue Category, is calculated as the average annual rate of increase or decrease in raw carbon dioxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

#### **3.1.17.9 CH4 growth rate (epi\_cha)**

*Long tag:* qog\_ei\_epi\_cha

*Original tag:* epi\_cha

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4833, Percent: 39.11

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 537 Percent: 11.11

*Description:*

The CH4 (methane) growth rate, which makes up 15percent of the Climate Change Issue Category, is calculated as the average annual rate of increase or decrease in raw methane emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

#### **3.1.17.10 Ecosystem Services Issue Category (epi\_ecs)**

*Long tag:* qog\_ei\_epi\_ecs

*Original tag:* epi\_ecs

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 176, Percent: 1.42

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 11 Percent: 6.25

*Description:*

Ecosystem Services Issue Category consists of 3 indicators:

1) Tree cover loss, measured as a five-year moving average of the percentage of forest lost from the extent of forest cover in the reference year 2000. They define a forest as any land area with over 30percent canopy cover. It is log-transformed,  $\ln(x + 1)$ , = 9.70E-07, and given 90percent weight in the aggregation.

2) Grassland loss, measured as a five-year moving average of percentage of gross losses in grassland areas compared to the 1992 reference year. It is log-transformed,  $\ln(x + 1)$ , = 4.45E-06, and given 5percent weight in the aggregation.

3) Wetland loss, measured as a five-year moving average of percentage of gross losses in wetland areas compared to the 1992 reference year. It is log-transformed,  $\ln(x + 1)$ , = 2.47E-06, and given 5percent weight in the aggregation.

The issue category varies from 0 to 100.

### **3.1.17.11 Environmental Health Policy Objective (epi\_eh)**

*Long tag:* qog\_ei\_epi\_eh

*Original tag:* epi\_eh

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Environmental Health Policy Objective measures how well countries are protecting their populations from environmental health risks. It comprises 40percent of the total EPI score and consists of 4 issue categories: Air Quality (50percent), Sanitation and Drinking Water (40percent), Heavy Metals (5percent), and Waste Management (5percent). The policy objective varies from 0 to 100.

### **3.1.17.12 Environmental Performance Index (epi\_epi)**

*Long tag:* qog\_ei\_epi\_epi

*Original tag:* epi\_epi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

The 2020 Environmental Performance Index (EPI) scores 180 countries on 32 performance indicators across 11 issue categories related to environmental health and ecosystem vitality. The 2020 EPI is a composite index. The EPI researchers begin by gathering data on 32 individual metrics of environmental performance. These metrics are aggregated into a hierarchy beginning with 11 issue categories: Air Quality, Sanitation and Drinking Water, Heavy Metals, Waste Management, Biodiversity and Habitat, Ecosystem Services, Fisheries, Climate Change, Pollution Emissions, Water Resources, and Agriculture.

These issue categories are then combined into 2 policy objectives, Environmental Health and Ecosystem Vitality, and then finally consolidated into the overall EPI. To allow for meaningful comparisons, before aggregation the EPI researchers construct scores for each of the 32 indicators, placing them onto a common scale where 0 indicates worst performance and 100 indicates best performance. How far a country is from achieving international targets of sustainability determines its placement on this scale.

Note: The EPI scores are not comparable over time, therefore, this dataset only includes the EPI scores from the latest release.

**3.1.17.13 Ecosystem Vitality Policy Objective (epi\_ev)**

*Long tag:* qog\_ei\_epi\_ev

*Original tag:* epi\_ev

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Ecosystem Vitality Policy Objective measures how well countries are preserving, protecting, and enhancing ecosystems and the services they provide. It comprises 60percent of the total EPI score and consists of 7 issue categories: Biodiversity and Habitat (25percent), Ecosystem Services (10percent), Fisheries (10percent), Climate Change (40percent), Pollution Emissions (5percent), Agriculture (5percent), and Water Resources (5percent). The policy objective varies from 0 to 100.

**3.1.17.14 Fish caught by trawling (epi\_fct)**

*Long tag:* qog\_ei\_epi\_fct

*Original tag:* epi\_fct

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2088, Percent: 16.9

*Non-missing observations in chosen unit:* Sum: 1854, Percent: 6.22

*Lost observations in chosen unit:* Sum: 234 Percent: 11.21

*Description:*

Fish caught by trawling measures the percentage of a country's fish caught by bottom or pelagic trawling, where a fishing net is pulled through the water behind a boat. This practice is indiscriminate and wasteful and can severely damage marine ecosystems. The variable is log-transformed according to the formula  $\ln(x+)$ , where  $= 8.40E-08$ .

Original source: Sea Around Us.

When using this variable, please cite both EPI and the original source.

### 3.1.17.15 F-gas growth rate (epi\_fga)

*Long tag:* qog\_ei\_epi\_fga

*Original tag:* epi\_fga

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3072, Percent: 24.86

*Non-missing observations in chosen unit:* Sum: 2864, Percent: 9.61

*Lost observations in chosen unit:* Sum: 208 Percent: 6.77

*Description:*

The F-gas growth rate, which makes up 10percent of the Climate Change Issue Category, is calculated as the average annual rate of increase or decrease in raw fluorinated gas emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

### 3.1.17.16 Fisheries Issue Category (epi\_fsh)

*Long tag:* qog\_ei\_epi\_fsh

*Original tag:* epi\_fsh

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 136, Percent: 1.1

*Non-missing observations in chosen unit:* Sum: 122, Percent: 0.41

*Lost observations in chosen unit:* Sum: 14 Percent: 10.29

*Description:*

Fisheries Issue Category consists of 3 indicators:

1) Fish stock status, measured as the percentage of a country's total catch that comes from overexploited or collapsed stocks, considering all fish stocks within a country's EEZs. Because continued and increased stock exploitation leads to smaller catches, this indicator sheds light on the impact of a country's fishing practices. The metric is calculated as an average percentage weighted by catch and summed across classes of concern. It is log-transformed,  $\ln(x + 1)$ , = 1.13E-05, and given 35percent weight in the aggregation.

2) Marine Trophic Index (MTI), which measures the health of a country's fishing stock based on expected catch and changes over time. The MTI describes the degree to which a country is depleting species at higher trophic levels and "fishing down the food web." It is log-transformed,  $\ln(x + 1)$ , = 9.51E-07, and given 35percent weight in the aggregation.

3) Fish caught by trawling, measured as the percentage of a country's fish caught by bottom or pelagic trawling, where a fishing net is pulled through the water behind a boat. It is log-transformed,  $\ln(x + 1)$ , = 8.40E-08, and given 30percent weight in the aggregation.

The issue category varies from 0 to 100.

### 3.1.17.17 Fish stock status (epi\_fss)

*Long tag:* qog\_ei\_epi\_fss

*Original tag:* epi\_fss

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3061, Percent: 24.77

*Non-missing observations in chosen unit:* Sum: 2732, Percent: 9.17

*Lost observations in chosen unit:* Sum: 329 Percent: 10.75

*Description:*

Fish stock status measures the percentage of a country's total catch that comes from overexploited or collapsed stocks, considering all fish stocks within a country's EEZs. Because continued and increased stock exploitation leads to smaller catches, this indicator sheds light on the impact of a country's fishing practices. The variable is log-transformed according to the formula  $\ln(x+)$ , where  $= 1.13E-05$ .

Original source: Sea Around Us.

When using this variable, please cite both EPI and the original source.

### 3.1.17.18 GHG emissions per capita (epi\_ghp)

*Long tag:* qog\_ei\_epi\_ghp

*Original tag:* epi\_ghp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4998, Percent: 40.44

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 641 Percent: 12.83

*Description:*

EPI calculates greenhouse gas (GHG) emissions per capita for each country in the year 2017. The variable is log-transformed. The unit of measurement is gigagrams (Gg) of CO<sub>2</sub>-equivalent per person.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

### 3.1.17.19 GHG intensity trend (epi\_gib)

*Long tag:* qog\_ei\_epi\_gib

*Original tag:* epi\_gib

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4842, Percent: 39.18

*Non-missing observations in chosen unit:* Sum: 4305, Percent: 14.45

*Lost observations in chosen unit:* Sum: 537 Percent: 11.09

*Description:*

The greenhouse gas (GHG) intensity growth rate indicator serves as a signal of countries' progress in decoupling emissions from economic growth. EPI calculates an annual average growth rate in GHG emissions per unit of GDP over the years 2008-2017. This indicator highlights the need for action on climate change mitigation in countries at all income levels.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

### 3.1.17.20 Grassland loss (epi\_grl)

*Long tag:* qog\_ei\_epi\_grl

*Original tag:* epi\_grl

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4504, Percent: 36.45

*Non-missing observations in chosen unit:* Sum: 4175, Percent: 14.01

*Lost observations in chosen unit:* Sum: 329 Percent: 7.3

*Description:*

Grassland loss is measured using a five-year moving average of percentage of gross losses in grassland areas compared to the 1992 reference year. The variable is log-transformed according to the formula  $\ln(x+)$ , where  $= 4.45E-06$ .

Original source: European Space Agency.

When using this variable, please cite both EPI and the original source.

### 3.1.17.21 Sanitation and Drinking Water Issue Category (epi\_h2o)

*Long tag:* qog\_ei\_epi\_h2o

*Original tag:* epi\_h2o

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Sanitation and Drinking Water Issue Category consists of two indicators:

1) Unsafe sanitation, measured as the proportion of a country's population exposed to health risks from their access to sanitation, defined by the primary toilet type used by households. It is log-transformed and given 40percent weight in the aggregation.

2) Unsafe drinking water, measured as the proportion of a country's population exposed to health risks from their access to drinking water, defined by the primary water source used by households and the household water treatment, or the treatment that happens at the point of water collection. It is log-transformed and given 60percent weight in the aggregation.

Both indicators are measured using the number of age-standardized disability-adjusted life-years (DALYs) lost per 100,000 persons. The issue category varies from 0 to 100.

### 3.1.17.22 Household solid fuels (epi\_had)

*Long tag:* qog\_ei\_epi\_had

*Original tag:* epi\_had

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

EPI measures household solid fuels using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to household air pollution (HAP) from the use of household solid fuels. The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation.

When using this variable, please cite both EPI and the original source.

### **3.1.17.23 Heavy Metals Issue Category (epi\_hmt)**

*Long tag:* qog\_ei\_epi\_hmt

*Original tag:* epi\_hmt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Heavy Metals Issue Category consists of the indicator Lead Exposure, which measures the number of age-standardized disability-adjusted life-years (DALYs) lost per 100,000 persons due to this risk. It is log-transformed. The issue category varies from 0 to 100.

### **3.1.17.24 CO2 from land cover (epi\_lcb)**

*Long tag:* qog\_ei\_epi\_lcb

*Original tag:* epi\_lcb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4374, Percent: 35.39

*Non-missing observations in chosen unit:* Sum: 4097, Percent: 13.75

*Lost observations in chosen unit:* Sum: 277 Percent: 6.33

*Description:*

This indicator measures CO2 emissions from land cover change and is calculated over the years 2001-2015. The unit of measurement is proportion.

Original source: Mullion Group.

When using this variable, please cite both EPI and the original source.

### **3.1.17.25 Marine protected areas (epi\_mpa)**

*Long tag:* qog\_ei\_epi\_mpa

*Original tag:* epi\_mpa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)



*Merge scores:*

*Non-missing observations in original unit:* Sum: 3778, Percent: 30.57

*Non-missing observations in chosen unit:* Sum: 3241, Percent: 10.88

*Lost observations in chosen unit:* Sum: 537 Percent: 14.21

*Description:*

Marine protected areas indicator is measured as the percentage of a country's total exclusive economic zone (EEZ) designated as marine protected areas (MPAs). MPAs represent a critical tool for protecting marine ecosystems from unsustainable fishing practices, pollution, and human disturbance. Because each country may have multiple EEZs, the summed area of MPAs is divided by the summed EEZ.

Original source: World Database on Protected Areas.

When using this variable, please cite both EPI and the original source.

**3.1.17.26 Controlled solid waste (epi\_msw)**

*Long tag:* qog\_ei\_epi\_msw

*Original tag:* epi\_msw

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4331, Percent: 14.54

*Lost observations in chosen unit:* Sum: 641 Percent: 12.89

*Description:*

Controlled solid waste refers to the proportion of household and commercial waste generated in a country that is collected and treated in a manner that controls environmental risks. This metric counts waste as "controlled" if it is treated through recycling, composting, anaerobic digestion, incineration, or disposed of in a sanitary landfill.

Original source: Wiedinmyer et al. 2014 & Kaza et al. 2018.

When using this variable, please cite both EPI and the original source.

**3.1.17.27 Marine trophic index (epi\_mti)**

*Long tag:* qog\_ei\_epi\_mti

*Original tag:* epi\_mti

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3414, Percent: 27.63

*Non-missing observations in chosen unit:* Sum: 3007, Percent: 10.09

*Lost observations in chosen unit:* Sum: 407 Percent: 11.92

*Description:*

Marine Trophic Index (MTI) measures the health of a country's fishing stock based on expected catch and changes over time. The MTI measures the degree to which a country is depleting species at higher trophic levels and "fishing down the food web." The variable is log-transformed according to the formula  $\ln(x+)$ , where  $= 9.51E-07$ .

Original source: Sea Around Us.

When using this variable, please cite both EPI and the original source.

**3.1.17.28 N2O growth rate (epi\_noa)**

*Long tag:* qog\_ei\_epi\_noa

*Original tag:* epi\_noa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4833, Percent: 39.11

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 537 Percent: 11.11

*Description:*

The N2O growth rate, which makes up 5percent of the Climate Change issue category, is calculated as the average annual rate of increase or decrease in raw nitrous oxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Potsdam Institute for Climate Impact Research.

When using this variable, please cite both EPI and the original source.

**3.1.17.29 NOx growth rate (epi\_nxa)**

*Long tag:* qog\_ei\_epi\_nxa

*Original tag:* epi\_nxa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4755, Percent: 38.48

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 459 Percent: 9.65

*Description:*

The NOX growth rate is calculated as the average annual rate of increase or decrease in NOX over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Community Emissions Data Systems.

When using this variable, please cite both EPI and the original source.

**3.1.17.30 Ozone exposure (epi\_ozd)**

*Long tag:* qog\_ei\_epi\_ozd

*Original tag:* epi\_ozd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

EPI measures ozone exposure using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to ground-level ozone pollution. The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation.

When using this variable, please cite both EPI and the original source.

### 3.1.17.31 Protected areas representativeness index (epi\_par)

*Long tag:* qog\_ei\_epi\_par

*Original tag:* epi\_par

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

The PARI indicator measures ecological representativeness as the proportion of biologically scaled environmental diversity included in a country's terrestrial protected areas. The measure relies on remote sensing, biodiversity informatics, and global modeling of fine-scaled variation in biodiversity composition for plant, vertebrate, and invertebrate species.

Original source: Commonwealth Scientific and Industrial Research Organization.

When using this variable, please cite both EPI and the original source.

### 3.1.17.32 Lead exposure (epi\_pbd)

*Long tag:* qog\_ei\_epi\_pbd

*Original tag:* epi\_pbd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

EPI measures lead exposure using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to lead contamination in the environment. The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation.

When using this variable, please cite both EPI and the original source.

### 3.1.17.33 PM2.5 exposure (epi\_pmd)

*Long tag:* qog\_ei\_epi\_pmd

*Original tag:* epi\_pmd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

Ambient particulate matter pollution measured with the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to fine air particulate matter smaller than 2.5 micrometers (PM2.5). The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation Transformation.

When using this variable, please cite both EPI and the original source.

**3.1.17.34 SO2 growth rate (epi\_sda)**

*Long tag:* qog\_ei\_epi\_sda

*Original tag:* epi\_sda

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4755, Percent: 38.48

*Non-missing observations in chosen unit:* Sum: 4296, Percent: 14.42

*Lost observations in chosen unit:* Sum: 459 Percent: 9.65

*Description:*

The SO2 growth rate is calculated as the average annual rate of increase or decrease in SO2 over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation.

Original source: Community Emissions Data Systems.

When using this variable, please cite both EPI and the original source.

**3.1.17.35 Species habitat index (epi\_shi)**

*Long tag:* qog\_ei\_epi\_shi

*Original tag:* epi\_shi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4166, Percent: 33.71

*Non-missing observations in chosen unit:* Sum: 4019, Percent: 13.49

*Lost observations in chosen unit:* Sum: 147 Percent: 3.53

*Description:*

Species Habitat Index (SHI) estimates potential population losses, as well as regional and global extinction risks of individual species, using habitat loss as a proxy. The SHI indicator measures the proportion of suitable habitat within a country that remains intact for each species in that country relative to a baseline set in the year 2001.

Original source: Map of Life.

When using this variable, please cite both EPI and the original source.

**3.1.17.36 Sustainable nitrogen management index (epi\_snm)**

*Long tag:* qog\_ei\_epi\_snm

*Original tag:* epi\_snm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:**Non-missing observations in original unit:* Sum: 4868, Percent: 39.39*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62*Lost observations in chosen unit:* Sum: 511 Percent: 10.5*Description:*

The Sustainable Nitrogen Management Index (SNMI) seeks to balance efficient application of nitrogen fertilizer with maximum crop yields as a measure of the environmental performance of agricultural production. The 2020 EPI uses the SNMI as a proxy for agricultural drivers of environmental damage.

Original source: UMCES.

When using this variable, please cite both EPI and the original source.

**3.1.17.37 Species protection index (epi\_spi)***Long tag:* qog\_ei\_epi\_spi*Original tag:* epi\_spi*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Wendling et al. (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 4027, Percent: 32.59*Non-missing observations in chosen unit:* Sum: 3906, Percent: 13.11*Lost observations in chosen unit:* Sum: 121 Percent: 3*Description:*

Species Protection Index (SPI) evaluates the species-level ecological representativeness of each country's protected area network. The SPI metric uses remote sensing data, global biodiversity informatics, and integrative models to map suitable habitat for over 30,000 terrestrial vertebrate, invertebrate, and plant species at high resolutions. The unit of measurement is percentage.

Original source: Map of Life.

When using this variable, please cite both EPI and the original source.

**3.1.17.38 Terrestrial biome protection (Global weights) (epi\_tbg)***Long tag:* qog\_ei\_epi\_tbg*Original tag:* epi\_tbg*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Wendling et al. (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 4998, Percent: 40.44*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62*Lost observations in chosen unit:* Sum: 641 Percent: 12.83*Description:*

EPI derives the terrestrial biome protection indicators by first calculating the proportions of the area of each of a country's biome types that are covered by protected areas and then constructing a weighted sum of the protection percentages for all biomes within that country. For the terrestrial biome protection (global weights) indicator, protection percentages are weighted according to the global prevalence of each biome type. This indicator evaluates a country's contribution toward the global 17percent protection goal.

Original source: World Database on Protected Areas.

When using this variable, please cite both EPI and the original source.

### 3.1.17.39 Terrestrial biome protection (National weights) (epi\_tbn)

*Long tag:* qog\_ei\_epi\_tbn

*Original tag:* epi\_tbn

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4998, Percent: 40.44

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 641 Percent: 12.83

*Description:*

EPI derives the terrestrial biome protection indicators by first calculating the proportions of the area of each of a country's biome types that are covered by protected areas and then constructing a weighted sum of the protection percentages for all biomes within that country. For the terrestrial biome protection (national weights) indicator, protection percentages are weighted according to the prevalence of each biome type within that country. This indicator evaluates a country's efforts to achieve 17percent protection for all biomes within its borders, as per Aichi Target 11.

Original source: World Database on Protected Areas.

When using this variable, please cite both EPI and the original source.

### 3.1.17.40 Tree cover loss (epi\_tcl)

*Long tag:* qog\_ei\_epi\_tcl

*Original tag:* epi\_tcl

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4608, Percent: 37.29

*Non-missing observations in chosen unit:* Sum: 4149, Percent: 13.93

*Lost observations in chosen unit:* Sum: 459 Percent: 9.96

*Description:*

EPI quantifies tree cover loss by constructing a five-year moving average of the percentage of forest lost from the extent of forest cover in the reference year 2000. A forest is defined as any land area with over 30percent canopy cover. The variable is log-transformed.

Original source: Global Forest Watch.

When using this variable, please cite both EPI and the original source.

### 3.1.17.41 Unsafe sanitation (epi\_usd)

*Long tag:* qog\_ei\_epi\_usd

*Original tag:* epi\_usd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

EPI measures unsafe sanitation using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to their exposure to inadequate sanitation facilities. The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation.

When using this variable, please cite both EPI and the original source.

### **3.1.17.42 Unsafe drinking water (epi\_uwd)**

*Long tag:* qog\_ei\_epi\_uwd

*Original tag:* epi\_uwd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4972, Percent: 40.23

*Non-missing observations in chosen unit:* Sum: 4357, Percent: 14.62

*Lost observations in chosen unit:* Sum: 615 Percent: 12.37

*Description:*

EPI measures unsafe drinking water using the number of age-standardized disability-adjusted life-years lost per 100,000 persons (DALY rate) due to exposure to unsafe drinking water. The variable is log-transformed.

Original source: Institute for Health Metrics and Evaluation.

When using this variable, please cite both EPI and the original source.

### **3.1.17.43 Waste Management Issue Category (epi\_wmg)**

*Long tag:* qog\_ei\_epi\_wmg

*Original tag:* epi\_wmg

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Waste Management Issue Category consists of the indicator Controlled Solid Waste, which refers to the proportion of household and commercial waste generated in a country that is collected and treated in a manner that controls environmental risks. This metric counts waste as "controlled" if it is treated through recycling, composting, anaerobic digestion, incineration, or disposed of in a sanitary landfill. The issue category varies from 0 to 100.

### **3.1.17.44 Water Resources Issue Category (epi\_wrs)**

*Long tag:* qog\_ei\_epi\_wrs

*Original tag:* epi\_wrs

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Water Resources Issue Category consists of the indicator Wastewater Treatment, which measures the percentage of wastewater that undergoes at least primary treatment, normalized by the proportion of the population connected to a municipal wastewater collection system. It is calculated through a straightforward product of wastewater treatment level and sewerage connection rate. The issue category varies from 0 to 100.

### 3.1.17.45 Wetland loss (epi\_wtl)

*Long tag:* qog\_ei\_epi\_wtl

*Original tag:* epi\_wtl

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4251, Percent: 34.4

*Non-missing observations in chosen unit:* Sum: 3948, Percent: 13.25

*Lost observations in chosen unit:* Sum: 303 Percent: 7.13

*Description:*

Wetland loss is quantified using a five-year moving average of percentage of gross losses in wetland areas compared to the 1992 reference year. The variable is log-transformed according to the formula  $\ln(x+)$ , where  $= 2.47E-06$ .

Original source: European Space Agency.

When using this variable, please cite both EPI and the original source.

### 3.1.17.46 Wastewater treatment (epi\_wwt)

*Long tag:* qog\_ei\_epi\_wwt

*Original tag:* epi\_wwt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Wendling et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4937, Percent: 39.95

*Non-missing observations in chosen unit:* Sum: 4322, Percent: 14.51

*Lost observations in chosen unit:* Sum: 615 Percent: 12.46

*Description:*

The percentage of wastewater that undergoes at least primary treatment in each country, normalized by the proportion of the population connected to a municipal wastewater collection system.

Original source: UNSD, OECD, Eurostat, etc.

When using this variable, please cite both EPI and the original source.

### 3.1.18 European Social Survey - Wave 1-9

Dataset by: European Social Survey The European Social Survey (ESS) is an academically-driven multi-country survey, which has been administered in over 30 countries to date. Its three aims are: first - to monitor and interpret changing public attitudes and values within Europe and to investigate how they interact with Europe's changing institutions; second - to advance and consolidate improved



methods of cross-national survey measurement in Europe and beyond; and third - to develop a series of European social indicators, including attitudinal indicators. This dataset includes two types of variables: 1) percentage of respondents choosing a particular response option, and 2) average response per country, weighted using design weights (dweight), as recommended by the ESS. Link to the original source: <http://www.europeansocialsurvey.org/data/round-index.html>

### 3.1.18.1 Climate policy support: bans (mean) (ess\_banhhap\_m)

*Long tag:* qog\_ei\_ess\_banhhap\_m

*Original tag:* ess\_banhhap\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D30-32: "To what extent are you in favour or against the following policies in [country] to reduce climate change? A law banning the sale of the least energy-efficient household appliances". (1) Strongly in favor, (2) Somewhat in favor, (3) Neither in favor nor against, (4) Somewhat against, (5) Strongly against. Answers (7) Refusal and (8) Don't know are deleted. A higher score means that there is a higher aversion towards the proposed ban in the general population. A lower score means that there is a higher support towards the ban in the general population.

### 3.1.18.2 Belief that climate change is natural (percent) (ess\_ccnthum\_p)

*Long tag:* qog\_ei\_ess\_ccnthum\_p

*Original tag:* ess\_ccnthum\_p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Percent of replies "Entirely by natural processes" and "Mainly by natural processes" to D22: "Do you think that climate change is caused by natural processes, human activity, or both?". (1) Entirely by natural processes, (2) Mainly by natural processes, (3) About equally by natural processes and human activity, (4) Mainly by human activity, (5) Entirely by human activity, (55) I don't think climate change is happening, (77) Refusal, (88) Don't know. A higher score means that there are more people who believe that climate change is happening due to natural rather than human-induced causes. A lower score means that there are fewer people who believe that these are natural processes that are behind climate change.

### 3.1.18.3 Personal responsibility to reduce climate change (mean) (ess\_ccrdprs\_m)

*Long tag:* qog\_ei\_ess\_ccrdprs\_m

*Original tag:* ess\_ccrdprs\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D23: "To what extent do you feel a personal responsibility to try to reduce climate change?". (00) Not at all - (10) A great deal. Answers (77) Refusal and (88) Don't know are deleted. The higher the score the more people feel personal responsibility for reducing climate change. The lower the score the fewer people feel personal responsibility for reducing climate change.

#### **3.1.18.4 Climate change denial (percent) (ess\_clmchnng\_p)**

*Long tag:* qog\_ei\_ess\_clmchnng\_p

*Original tag:* ess\_clmchnng\_p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Percent of replies "Probably not changing" and "Definitely not changing" to D19: "You may have heard the idea that the world's climate is changing due to increases in temperature over the past 100 years. What is your personal opinion on this? Do you think the world's climate is changing?". (1) Definitely changing, (2) Probably changing, (3) Probably not changing, (4) Definitely not changing, (7) Refusal, (8) Don't know. A higher score means that more people believe that the climate is not changing. A lower score means that more people believe that the climate is changing.

#### **3.1.18.5 Thinking about climate change (mean) (ess\_clmthgt\_m)**

*Long tag:* qog\_ei\_ess\_clmthgt\_m

*Original tag:* ess\_clmthgt\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D20 and D21: "How much have you thought about climate change before today?". (1) Not at all, (2) Very little, (3) Some, (4) A lot, (5) A great deal. Answers (7) Refusal and (8) Don't know are deleted.

D20 was only asked to those who replied "Definitely not changing" to question D19 "Do you think climate is changing?". D21 is the same question but was asked to everyone else. In this dataset, we combined the replies for D20 and D21 before taking an average. A higher score means that a larger part of the population thought about climate change prior to the survey. A lower score means that a smaller part of the population thought about climate change prior to the survey.

#### **3.1.18.6 Belief in climate action: governments (mean) (ess\_gvsrdcc\_m)**

*Long tag:* qog\_ei\_ess\_gvsrdcc\_m

*Original tag:* ess\_gvsrdcc\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:**Non-missing observations in original unit:* Sum: 23, Percent: 0.19*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

Average reply to D28: "And how likely do you think it is that governments in enough countries will take action that reduces climate change?". (00) Not likely at all - (10) Extremely likely. Answers (77) Refusal and (88) Don't know are deleted. A higher score means that larger parts of the population believe that enough governments will take action towards climate change. A lower score means that fewer people believe that enough governments will take action towards climate change.

**3.1.18.7 Important to care for the environment (mean) (ess\_impenv\_m)***Long tag:* qog\_ei\_ess\_impenv\_m*Original tag:* ess\_impenv\_m*Dataset citation:* Povitkina et al. (2021)*Variable citation:* NSD - Norwegian Centre for Research Data (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 225, Percent: 1.82*Non-missing observations in chosen unit:* Sum: 225, Percent: 0.76*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

Average reply to CARD 76: "Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer;

She/he strongly believes that people should care for nature. Looking after the environment is important to her/him";

- (1) Very much like me
- (2) Like me
- (3) Somewhat like me
- (4) A little like me
- (5) Not like me
- (6) Not like me at all

Answers "Don't know" are deleted. A higher score means that fewer people think that it is important to care about nature/environment. A lower score means that more people think that it is important to care about nature/environment.

**3.1.18.8 Climate policy support: taxes (mean) (ess\_inctxff\_m)***Long tag:* qog\_ei\_ess\_inctxff\_m*Original tag:* ess\_inctxff\_m*Dataset citation:* Povitkina et al. (2021)*Variable citation:* NSD - Norwegian Centre for Research Data (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 23, Percent: 0.19*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

Average reply to D30-32: "To what extent are you in favour or against the following policies in [country] to reduce climate change? Increasing taxes on fossil fuels, such as oil,

gas and coal"";(1) Strongly in favor, (2) Somewhat in favor, (3) Neither in favor nor against, (4) Somewhat against, (5) Strongly against. Answers (7) Refusal and (8) Don't know are deleted. A higher score means that the aversion towards a fossil fuel tax is higher in the population. A lower score means that there is more support towards a fossil fuel tax in the population.

### 3.1.18.9 Belief in climate action: individuals (mean) (ess\_iklnten\_m)

*Long tag:* qog\_ei\_ess\_iklnten\_m

*Original tag:* ess\_iklnten\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D27: ""How likely do you think it is that large numbers of people will actually limit their energy use to try to reduce climate change?"";. (00) Not likely at all - (10) Extremely likely. Answers (77) Refusal and (88) Don't know are deleted. A higher score means that more people believe that a large number of people are likely to limit energy consumption to reduce climate change. A lower score means that fewer people believe that a large number of people are likely to reduce energy consumption to reduce climate change.

### 3.1.18.10 Climate policy support: subsidies (mean) (ess\_sbsrnen\_m)

*Long tag:* qog\_ei\_ess\_sbsrnen\_m

*Original tag:* ess\_sbsrnen\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D30-32: ""To what extent are you in favour or against the following policies in [country] to reduce climate change? Using public money to subsidise renewable energy such as wind and solar power"";. (1) Strongly in favor, (2) Somewhat in favor, (3) Neither in favor nor against, (4) Somewhat against, (5) Strongly against. Answers (7) Refusal and (8) Don't know are deleted. A higher score means that there is more aversion in the population towards government subsidies towards renewable energy. A lower score means that there is more support for renewable energy subsidies.

### 3.1.18.11 Worry about climate change (mean) (ess\_wrclmch\_m)

*Long tag:* qog\_ei\_ess\_wrclmch\_m

*Original tag:* ess\_wrclmch\_m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* NSD - Norwegian Centre for Research Data (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 23, Percent: 0.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Average reply to D24: ""How worried are you about climate change?"";. (1)

Not at all worried, (2) Not very worried, (3) Somewhat worried, (4) Very worried, (5) Extremely worried. Answers (7) Refusal and (8) Don't know are deleted. A higher score means that there is a higher degree of worry in the population about climate change. A lower score means that there is less worry in the population about climate change.

### 3.1.19 Environmental Land Use Data

Dataset by: Food and Agricultural Organization of the United Nations (FAO) The FAOSTAT Land Use domain contains data on 47 categories of land use, irrigation and agricultural practices, relevant to monitor agriculture, forestry, and fisheries activities at national, regional and global level. Data are available by country and year, with global coverage and annual updates. Note from original QoG codebook: Micronesia has been dropped due to duplicate cases. Link to the original source: <http://www.fao.org/faostat/en/#home>

#### 3.1.19.1 Agricultural land (percent of Land area) (fao\_luagr)

*Long tag:* qog\_ei\_fao\_luagr

*Original tag:* fao\_luagr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9560, Percent: 77.36

*Non-missing observations in chosen unit:* Sum: 8480, Percent: 28.46

*Lost observations in chosen unit:* Sum: 1080 Percent: 11.3

*Description:*

Agricultural land as a share of total land area.

#### 3.1.19.2 Arable land (percent of Agricultural land) (fao\_luagrara)

*Long tag:* qog\_ei\_fao\_luagrara

*Original tag:* fao\_luagrara

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9461, Percent: 76.56

*Non-missing observations in chosen unit:* Sum: 8472, Percent: 28.44

*Lost observations in chosen unit:* Sum: 989 Percent: 10.45

*Description:*

Arable land as a share of total agricultural land.

#### 3.1.19.3 Cropland (percent of Agricultural land) (fao\_luagrcrop)

*Long tag:* qog\_ei\_fao\_luagrcrop

*Original tag:* fao\_luagrcrop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9560, Percent: 77.36

*Non-missing observations in chosen unit:* Sum: 8480, Percent: 28.46

*Lost observations in chosen unit:* Sum: 1080 Percent: 11.3

*Description:*

Cropland as a share of total agricultural land.

**3.1.19.4 Agriculture area actually irrigated (percent of Agricultural land) (fao\_luagrirrac)***Long tag:* qog\_ei\_fao\_luagrirrac*Original tag:* fao\_luagrirrac*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Food and Agriculture Organization of the United Nations (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 850, Percent: 6.88*Non-missing observations in chosen unit:* Sum: 832, Percent: 2.79*Lost observations in chosen unit:* Sum: 18 Percent: 2.12*Description:*

Agriculture area actually irrigated as a share of total agricultural land.

**3.1.19.5 Land area equipped for irrigation (percent of Agricultural land) (fao\_luagrirreq)***Long tag:* qog\_ei\_fao\_luagrirreq*Original tag:* fao\_luagrirreq*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Food and Agriculture Organization of the United Nations (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 8489, Percent: 68.69*Non-missing observations in chosen unit:* Sum: 7986, Percent: 26.8*Lost observations in chosen unit:* Sum: 503 Percent: 5.93*Description:*

Land area equipped for irrigation as a share of total agricultural land.

**3.1.19.6 Land area equipped for irrigation (percent of Cropland) (fao\_luagrirreqcrop)***Long tag:* qog\_ei\_fao\_luagrirreqcrop*Original tag:* fao\_luagrirreqcrop*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Food and Agriculture Organization of the United Nations (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 8287, Percent: 67.06*Non-missing observations in chosen unit:* Sum: 7784, Percent: 26.13*Lost observations in chosen unit:* Sum: 503 Percent: 6.07*Description:*

Land area equipped for irrigation as a share of total cropland.

**3.1.19.7 Agriculture area under organic agric. (percent of Agricultural land) (fao\_luagrorg)***Long tag:* qog\_ei\_fao\_luagrorg*Original tag:* fao\_luagrorg*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Food and Agriculture Organization of the United Nations (2020)*Merge scores:**Non-missing observations in original unit:* Sum: 1970, Percent: 15.94*Non-missing observations in chosen unit:* Sum: 1880, Percent: 6.31*Lost observations in chosen unit:* Sum: 90 Percent: 4.57

*Description:*

Agriculture area under organic agriculture as a share of total agricultural land.

**3.1.19.8 Land under perm meadows and pastures (percent of Agricultural land) (fao\_luagrpas)**

*Long tag:* qog\_ei\_fao\_luagrpas

*Original tag:* fao\_luagrpas

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9146, Percent: 74.01

*Non-missing observations in chosen unit:* Sum: 8254, Percent: 27.7

*Lost observations in chosen unit:* Sum: 892 Percent: 9.75

*Description:*

Land under perm meadows and pastures as a share of total agricultural land.

**3.1.19.9 Land under permanent crops (percent of Agricultural land) (fao\_luagrpcrop)**

*Long tag:* qog\_ei\_fao\_luagrpcrop

*Original tag:* fao\_luagrpcrop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9227, Percent: 74.66

*Non-missing observations in chosen unit:* Sum: 8317, Percent: 27.92

*Lost observations in chosen unit:* Sum: 910 Percent: 9.86

*Description:*

Land under permanent crops as a share of total agricultural land.

**3.1.19.10 Cropland (percent of Land area) (fao\_lucrop)**

*Long tag:* qog\_ei\_fao\_lucrop

*Original tag:* fao\_lucrop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9560, Percent: 77.36

*Non-missing observations in chosen unit:* Sum: 8480, Percent: 28.46

*Lost observations in chosen unit:* Sum: 1080 Percent: 11.3

*Description:*

Cropland as a share of total land area.

**3.1.19.11 Forest land (percent of Land area) (fao\_luforest)**

*Long tag:* qog\_ei\_fao\_luforest

*Original tag:* fao\_luforest

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5420, Percent: 43.86

*Non-missing observations in chosen unit:* Sum: 4777, Percent: 16.03

*Lost observations in chosen unit:* Sum: 643 Percent: 11.86

*Description:*

Forest land as a share of total land area.

### **3.1.19.12 Planted forest (percent of Forest area) (fao\_luforplant)**

*Long tag:* qog\_ei\_fao\_luforplant

*Original tag:* fao\_luforplant

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5189, Percent: 41.99

*Non-missing observations in chosen unit:* Sum: 4684, Percent: 15.72

*Lost observations in chosen unit:* Sum: 505 Percent: 9.73

*Description:*

Planted forest as a share of total forest area.

### **3.1.19.13 Other naturally regenerated forest (percent of Forest area) (fao\_luforreg)**

*Long tag:* qog\_ei\_fao\_luforreg

*Original tag:* fao\_luforreg

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5186, Percent: 41.96

*Non-missing observations in chosen unit:* Sum: 4681, Percent: 15.71

*Lost observations in chosen unit:* Sum: 505 Percent: 9.74

*Description:*

Other naturally regenerated forest as a share of total forest area.

### **3.1.19.14 Land under perm meadows and pastures (percent of Land area) (fao\_lupas)**

*Long tag:* qog\_ei\_fao\_lupas

*Original tag:* fao\_lupas

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Food and Agriculture Organization of the United Nations (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9146, Percent: 74.01

*Non-missing observations in chosen unit:* Sum: 8254, Percent: 27.7

*Lost observations in chosen unit:* Sum: 892 Percent: 9.75

*Description:*

Land under perm meadows and pastures as a share of total land area.

### **3.1.20 Green Growth**

Dataset by: Organisation for Economic Co-operation and Development The OECD Green Growth database contains selected indicators for monitoring progress towards green growth to support policy making and inform the public at large. The database synthesises data and indicators across a wide range of domains including a range of OECD databases as well as external data sources. The database covers OECD member and accession countries, key partners (including Brazil, China, India, Indonesia and South Africa) and other selected non-OECD countries. The indicators have been selected according to well-specified criteria and embedded in a conceptual framework, which is structured around four groups to capture the main features of green growth:



(1) Environmental and resource productivity: indicate whether economic growth is becoming greener with more efficient use of natural capital and to capture aspects of production which are rarely quantified in economic models and accounting frameworks; (2) The natural asset base: indicate the risks to growth from a declining natural asset base; (3) Environmental dimension of quality of life: indicate how environmental conditions affect the quality of life and wellbeing of people; (4) Economic opportunities and policy responses: indicate the effectiveness of policies in delivering green growth and describe the societal responses needed to secure business and employment opportunities. Link to the original source: <https://stats.oecd.org/>

### 3.1.20.1 Population connected to public sewerage, percent total population (gg\_asew\_pop)

*Long tag:* qog\_ei\_gg\_asew\_pop

*Original tag:* gg\_asew\_pop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 352, Percent: 2.85

*Non-missing observations in chosen unit:* Sum: 352, Percent: 1.18

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The percentage of the total population with access to public sewerage.

### 3.1.20.2 Population connected to sewerage with primary treatment, percent total population (gg\_asewp)

*Long tag:* qog\_ei\_gg\_asewp

*Original tag:* gg\_asewp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 323, Percent: 2.61

*Non-missing observations in chosen unit:* Sum: 323, Percent: 1.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The percentage of the total population with access to public sewerage that includes a primary treatment process.

Warning: this variable has some negative values, which falls outside the expected range for percentage variables. Check the original dataset for explanations or updates.

### 3.1.20.3 Population connected to sewerage with secondary treatment, percent total population (gg\_asews)

*Long tag:* qog\_ei\_gg\_asews

*Original tag:* gg\_asews

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 321, Percent: 2.6

*Non-missing observations in chosen unit:* Sum: 321, Percent: 1.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The percentage of the total population with access to public sewerage that includes a secondary

treatment process.

#### **3.1.20.4 Population connected to sewerage with tertiary treatment, percent total population (gg\_asewt)**

*Long tag:* qog\_ei\_gg\_asewt

*Original tag:* gg\_asewt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 321, Percent: 2.6

*Non-missing observations in chosen unit:* Sum: 321, Percent: 1.08

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The percentage of the total population with access to public sewerage that includes a tertiary treatment process.

#### **3.1.20.5 Built up area per capita (gg\_buapc)**

*Long tag:* qog\_ei\_gg\_buapc

*Original tag:* gg\_buapc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 537, Percent: 4.35

*Non-missing observations in chosen unit:* Sum: 470, Percent: 1.58

*Lost observations in chosen unit:* Sum: 67 Percent: 12.48

*Description:*

The number of square meters of built-up area per inhabitant (m<sup>2</sup>/person).

#### **3.1.20.6 Built up area, percent total land (gg\_buapt)**

*Long tag:* qog\_ei\_gg\_buapt

*Original tag:* gg\_buapt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 537, Percent: 4.35

*Non-missing observations in chosen unit:* Sum: 470, Percent: 1.58

*Lost observations in chosen unit:* Sum: 67 Percent: 12.48

*Description:*

The built up area expressed as a percentage of total land area.

#### **3.1.20.7 Energy intensity, TPES per capita (gg\_ei)**

*Long tag:* qog\_ei\_gg\_ei

*Original tag:* gg\_ei

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1662, Percent: 13.45

*Non-missing observations in chosen unit:* Sum: 1620, Percent: 5.44

*Lost observations in chosen unit:* Sum: 42 Percent: 2.53

*Description:*

The energy intensity calculated as TPES (Total Primary Energy Supply) per capita (toe/person).

**3.1.20.8 Environmentally related government R and D budget, percent total government R and D (gg\_envrd\_gbaord)**

*Long tag:* qog\_ei\_gg\_envrd\_gbaord

*Original tag:* gg\_envrd\_gbaord

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 451, Percent: 3.65

*Non-missing observations in chosen unit:* Sum: 451, Percent: 1.51

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Environmentally related government R&D budget measures government budget appropriations or outlays for environmentally related research and development (R&D). It is expressed as a percentage of total government R&D expenditure.

**3.1.20.9 Environmentally related R and D expenditure, percent GDP (gg\_envrd\_gdp)**

*Long tag:* qog\_ei\_gg\_envrd\_gdp

*Original tag:* gg\_envrd\_gdp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 101, Percent: 0.82

*Non-missing observations in chosen unit:* Sum: 101, Percent: 0.34

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The environmentally related research and development (R&D) expenditure, expressed as a percentage of gross domestic product (GDP).

**3.1.20.10 Environmentally related ODA, percent total ODA (gg\_eoda)**

*Long tag:* qog\_ei\_gg\_eoda

*Original tag:* gg\_eoda

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 344, Percent: 2.78

*Non-missing observations in chosen unit:* Sum: 344, Percent: 1.15

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The environmentally related Official Development Assistance (ODA) expressed as a percentage of total ODA.

**3.1.20.11 Energy public RD and D budget, percent GDP (gg\_erdgdp)**

*Long tag:* qog\_ei\_gg\_erdgdp

*Original tag:* gg\_erdgdp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 346, Percent: 2.8

*Non-missing observations in chosen unit:* Sum: 346, Percent: 1.16

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The public budget for energy related research, development, and demonstration as a percentage of national gross domestic product (GDP).

### **3.1.20.12 Development of environment-related technologies, percent all technologies (gg\_etp)**

*Long tag:* qog\_ei\_gg\_etp

*Original tag:* gg\_etp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2015, Percent: 16.31

*Non-missing observations in chosen unit:* Sum: 1768, Percent: 5.93

*Lost observations in chosen unit:* Sum: 247 Percent: 12.26

*Description:*

The number of environment-related inventions expressed as a percentage of all domestic inventions (in all technologies).

Indicators of technology development are constructed by measuring inventive activity using patent data across a wide range of environment-related technological domains (ENV-TECH, see link below), including environmental management, water-related adaptation, and climate change mitigation technologies. The counts used here include only higher-value inventions (with patent family size = 2).

### **3.1.20.13 Development of environment-related technologies, percent inventions worldwide (gg\_etpw)**

*Long tag:* qog\_ei\_gg\_etpw

*Original tag:* gg\_etpw

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2015, Percent: 16.31

*Non-missing observations in chosen unit:* Sum: 1768, Percent: 5.93

*Lost observations in chosen unit:* Sum: 247 Percent: 12.26

*Description:*

The number of environment-related inventions expressed as a percentage of environment-related inventions worldwide.

Indicators of technology development are constructed by measuring inventive activity using patent data across a wide range of environment-related technological domains (ENV-TECH), including environmental management, water-related adaptation, and climate change mitigation technologies. The counts used here include only higher-value inventions (with patent family size = 2, meaning inventions filed in two or more jurisdictions).

### **3.1.20.14 Fossil fuel public RD and D budget (excluding CCS), percent total energy public RD and D (gg\_ffrd)**

*Long tag:* qog\_ei\_gg\_ffrd

*Original tag:* gg\_ffrd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 314, Percent: 2.54

*Non-missing observations in chosen unit:* Sum: 314, Percent: 1.05

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The public budget directed at research, development, and demonstration (RD&D) related to fossil fuels, including oil, gas, and coal and excluding RD&D related to CO2 capture and storage (CCS), expressed as a percentage of total energy RD&D public budgets (directed at all forms of energy).

### 3.1.20.15 Forest resource stocks (gg\_frs)

*Long tag:* qog\_ei\_gg\_frs

*Original tag:* gg\_frs

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 769, Percent: 6.22

*Non-missing observations in chosen unit:* Sum: 706, Percent: 2.37

*Lost observations in chosen unit:* Sum: 63 Percent: 8.19

*Description:*

The growing stock of standing trees expressed in million cubic meters (m3).

### 3.1.20.16 Forests under sustainable management certification FSC, percent total forest area (gg\_fsmc)

*Long tag:* qog\_ei\_gg\_fsmc

*Original tag:* gg\_fsmc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1078, Percent: 8.72

*Non-missing observations in chosen unit:* Sum: 979, Percent: 3.29

*Lost observations in chosen unit:* Sum: 99 Percent: 9.18

*Description:*

The share of forest area with a long-term management plan under the Forest Stewardship Council (FSC) certification expressed as a percentage of the total forest area.

### 3.1.20.17 Intensity of use of forest resources (gg\_iufr)

*Long tag:* qog\_ei\_gg\_iufr

*Original tag:* gg\_iufr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 248, Percent: 2.01

*Non-missing observations in chosen unit:* Sum: 248, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The intensity of use of forest resources measured as the ratio of actual fellings over annual

productive capacity (i.e. gross increment).

### 3.1.20.18 Mortality from exposure to ambient ozone (gg\_mao)

*Long tag:* qog\_ei\_gg\_mao

*Original tag:* gg\_mao

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2034, Percent: 16.46

*Non-missing observations in chosen unit:* Sum: 1902, Percent: 6.38

*Lost observations in chosen unit:* Sum: 132 Percent: 6.49

*Description:*

The mortality from exposure to ambient ozone expressed in deaths per million inhabitants.

### 3.1.20.19 Mortality from exposure to lead (gg\_ml)

*Long tag:* qog\_ei\_gg\_ml

*Original tag:* gg\_ml

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2034, Percent: 16.46

*Non-missing observations in chosen unit:* Sum: 1902, Percent: 6.38

*Lost observations in chosen unit:* Sum: 132 Percent: 6.49

*Description:*

The mortality from exposure to lead expressed in deaths per million inhabitants.

### 3.1.20.20 Mortality from exposure to ambient PM2.5 (gg\_mpm)

*Long tag:* qog\_ei\_gg\_mpm

*Original tag:* gg\_mpm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2034, Percent: 16.46

*Non-missing observations in chosen unit:* Sum: 1902, Percent: 6.38

*Lost observations in chosen unit:* Sum: 132 Percent: 6.49

*Description:*

The mortality from exposure to ambient PM2.5 expressed in deaths per million inhabitants.

### 3.1.20.21 Mortality from exposure to residential radon (gg\_mr)

*Long tag:* qog\_ei\_gg\_mr

*Original tag:* gg\_mr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2034, Percent: 16.46

*Non-missing observations in chosen unit:* Sum: 1902, Percent: 6.38

*Lost observations in chosen unit:* Sum: 132 Percent: 6.49

*Description:*

The mortality from exposure to residential radon expressed in deaths per million inhabitants.

**3.1.20.22 Municipal waste generated, kg per capita (gg\_mwGPC)**

*Long tag:* qog\_ei\_gg\_mwGPC

*Original tag:* gg\_mwGPC

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 436, Percent: 3.53

*Non-missing observations in chosen unit:* Sum: 436, Percent: 1.46

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The waste collected by or on behalf of municipalities expressed in kilograms (kg) per person.

**3.1.20.23 Municipal waste incinerated, percent treated waste (gg\_mwIPT)**

*Long tag:* qog\_ei\_gg\_mwIPT

*Original tag:* gg\_mwIPT

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 365, Percent: 2.95

*Non-missing observations in chosen unit:* Sum: 365, Percent: 1.23

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The municipal waste incinerated expressed as a percentage of all waste treated.

**3.1.20.24 Municipal waste disposed to landfills, percent treated waste (gg\_mwLPT)**

*Long tag:* qog\_ei\_gg\_mwLPT

*Original tag:* gg\_mwLPT

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 417, Percent: 3.37

*Non-missing observations in chosen unit:* Sum: 417, Percent: 1.4

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The municipal waste disposed to landfills expressed as a percentage of all waste treated.

**3.1.20.25 Municipal waste recycled or composted, percent treated waste (gg\_mwRPT)**

*Long tag:* qog\_ei\_gg\_mwRPT

*Original tag:* gg\_mwRPT

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 390, Percent: 3.16

*Non-missing observations in chosen unit:* Sum: 390, Percent: 1.31

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The municipal waste recycled or composted expressed as a percentage of all waste treated.

### 3.1.20.26 ODA - all sectors - climate change mitigation, percent total ODA (gg\_oda\_ccm)

*Long tag:* qog\_ei\_gg\_oda\_ccm

*Original tag:* gg\_oda\_ccm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 339, Percent: 2.74

*Non-missing observations in chosen unit:* Sum: 339, Percent: 1.14

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The Official Development Assistance (ODA) targeting climate change mitigation expressed as a percentage of total ODA.

### 3.1.20.27 Percentage of population exposed to more than 10 g/m3 of PM2.5 (gg\_pm25ex10p)

*Long tag:* qog\_ei\_gg\_pm25ex10p

*Original tag:* gg\_pm25ex10p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2205, Percent: 17.84

*Non-missing observations in chosen unit:* Sum: 1959, Percent: 6.58

*Lost observations in chosen unit:* Sum: 246 Percent: 11.16

*Description:*

The percentage of population exposed to a fine particulate matter (PM2.5) concentration greater than 10 micrograms (g) per cubic meter (m3).

The World Health Organization (WHO) provides air quality guidelines based on scientific evidence and expert advice. 10 g/m3 is the air quality guideline (AQG): These are the lowest levels at which total, cardiopulmonary and lung cancer mortality have been shown to increase with more than 95percent confidence in response to long-term exposure to PM2.5.

### 3.1.20.28 Percentage of population exposed to more than 35 g/m3 of PM2.5 (gg\_pm25ex35p)

*Long tag:* qog\_ei\_gg\_pm25ex35p

*Original tag:* gg\_pm25ex35p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2205, Percent: 17.84

*Non-missing observations in chosen unit:* Sum: 1959, Percent: 6.58

*Lost observations in chosen unit:* Sum: 246 Percent: 11.16

*Description:*

The percentage of population exposed to a fine particulate matter (PM2.5) concentration greater than 35 micrograms (g) per cubic meter (m3).

The World Health Organization (WHO) provides air quality guidelines based on scientific evidence and expert advice. 35 g/m3 is interim target-1: These levels are associated with about a 15percent higher long-term mortality risk relative to the Air Quality Guideline (AQG) level, which is 10 g/m3.



**3.1.20.29 Mean population exposure to PM2.5 (gg\_pm25exm)***Long tag:* qog\_ei\_gg\_pm25exm*Original tag:* gg\_pm25exm*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 2197, Percent: 17.78*Non-missing observations in chosen unit:* Sum: 1959, Percent: 6.58*Lost observations in chosen unit:* Sum: 238 Percent: 10.83*Description:*

The average microgram concentration of fine particulate matter (PM2.5) per cubic meter exposed to the population. This environmental and health hazard is measured by population-weighted concentration estimates (See OECD dataset `gg_pm25exm`; Exposure to PM2.5 in countries and regions).

**3.1.20.30 Petrol tax, USD per litre (gg\_pt)***Long tag:* qog\_ei\_gg\_pt*Original tag:* gg\_pt*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 476, Percent: 3.85*Non-missing observations in chosen unit:* Sum: 476, Percent: 1.6*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The tax rates per litre of petrol expressed at constant 2015 US dollars using purchasing power parity (PPP). The tax rates are calculated as the arithmetic average of the household excise tax for the unleaded premium 95, unleaded premium 98, and unleaded regular petrol, and are deflated using the Consumer Price Index.

**3.1.20.31 Renewable energy supply, percent TPES (gg\_re\_tpes)***Long tag:* qog\_ei\_gg\_re\_tpes*Original tag:* gg\_re\_tpes*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 1662, Percent: 13.45*Non-missing observations in chosen unit:* Sum: 1620, Percent: 5.44*Lost observations in chosen unit:* Sum: 42 Percent: 2.53*Description:*

Renewable energy supply is defined as the contribution of renewables to the total primary energy supply (TPES).

**3.1.20.32 Renewable electricity, percent total electricity generation (gg\_reperegen)***Long tag:* qog\_ei\_gg\_reperegen*Original tag:* gg\_reperegen*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 1663, Percent: 13.46

*Non-missing observations in chosen unit:* Sum: 1621, Percent: 5.44

*Lost observations in chosen unit:* Sum: 42 Percent: 2.53

*Description:*

The percentage of the national electrical supply generated from renewable sources.

### **3.1.20.33 Renewable energy public RD and D budget, percent total energy public RD and D (gg\_rerd\_erd)**

*Long tag:* qog\_ei\_gg\_rerd\_erd

*Original tag:* gg\_rerd\_erd

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 341, Percent: 2.76

*Non-missing observations in chosen unit:* Sum: 341, Percent: 1.14

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The percentage of all public energy related research, development, and demonstration (RD&D) that is directed towards renewable energy.

### **3.1.20.34 Threatened bird species, percent total known species (gg\_tbs)**

*Long tag:* qog\_ei\_gg\_tbs

*Original tag:* gg\_tbs

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 36, Percent: 0.29

*Non-missing observations in chosen unit:* Sum: 36, Percent: 0.12

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The number of threatened bird species expressed as a percentage of total known species within a country.

### **3.1.20.35 Threatened mammal species, percent total known species (gg\_tms)**

*Long tag:* qog\_ei\_gg\_tms

*Original tag:* gg\_tms

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 34, Percent: 0.28

*Non-missing observations in chosen unit:* Sum: 34, Percent: 0.11

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The number of threatened mammal species expressed as a percentage of total known species within a country.

### **3.1.20.36 Threatened vascular plant species, percent total known species (gg\_tps)**

*Long tag:* qog\_ei\_gg\_tps

*Original tag:* gg\_tps

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)

*Merge scores:**Non-missing observations in original unit:* Sum: 35, Percent: 0.28*Non-missing observations in chosen unit:* Sum: 35, Percent: 0.12*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The number of threatened vascular plant species expressed as a percentage of total known species within a country.

**3.1.20.37 Water stress, total freshwater abstraction as percent total available renewable resources (gg\_wsa)***Long tag:* qog\_ei\_gg\_wsa*Original tag:* gg\_wsa*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 323, Percent: 2.61*Non-missing observations in chosen unit:* Sum: 323, Percent: 1.08*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The total freshwater abstraction as a percentage of available renewable sources, as a proxy for water stress (scarcity). Abstraction refers to any process of water removal, extraction, or diversion for human use. A higher percentage indicates greater water stress.

**3.1.20.38 Water stress, total freshwater abstraction as percent total internal renewable resources (gg\_wsi)***Long tag:* qog\_ei\_gg\_wsi*Original tag:* gg\_wsi*Dataset citation:* Povitkina et al. (2021)*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020c)*Merge scores:**Non-missing observations in original unit:* Sum: 300, Percent: 2.43*Non-missing observations in chosen unit:* Sum: 300, Percent: 1.01*Lost observations in chosen unit:* Sum: 0 Percent: 0*Description:*

The total freshwater abstraction as a percentage of available internal renewable sources, as a proxy for water stress. Internal resources refer only to river flows and groundwater from rainfall within the country. Abstraction refers to any process of water removal, extraction, or diversion for human use. A higher percentage, therefore, indicates greater water stress.

**3.1.21 International Environmental Agreements Database Project**

Dataset by: International Environmental Agreements Database Project International Environmental Agreements (IEA) include efforts to regulate human interactions with the environment that involve legally binding commitments ("agreements") among governments ("international") that have environmental protection as a primary objective ("environmental"). The IEAs include: - instruments designated as convention, treaty, agreement, accord, or their non-English equivalents, and protocols and amendments to such instruments; - instruments, regardless of designation, establishing intergovernmental commissions; - instruments, regardless of designation, identified as binding by reliable sources (e.g., by a secretariat, UNEP, or published legal analysis); or - instruments, regardless of designation, whose texts fit accepted terminologies of legally-binding agreements. Intergovernmental "soft laws," such as action plans, agreed measures, codes of conduct, declarations, resolutions, and similar policies that are not binding are excluded.

European Union (EU) directives are also excluded due to their unique status. Link to the original source: <https://iea.uoregon.edu/>

#### **3.1.21.1 Number of IEAs entered into force for the first time (iead\_eif1)**

*Long tag:* qog\_ei\_iead\_eif1

*Original tag:* iead\_eif1

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols that entered into force for the first time (before any withdrawals), in the recorded year.

#### **3.1.21.2 Number of IEAs entered into force for the second time (iead\_eif2)**

*Long tag:* qog\_ei\_iead\_eif2

*Original tag:* iead\_eif2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols that entered into force after the first withdrawal, in the recorded year.

#### **3.1.21.3 Number of IEAs entered into force for the third time (iead\_eif3)**

*Long tag:* qog\_ei\_iead\_eif3

*Original tag:* iead\_eif3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols that entered into force after the second withdrawal, in the recorded year.

#### **3.1.21.4 Number of IEAs in force, counting terminated IEAs (iead\_inforce)**

*Long tag:* qog\_ei\_iead\_inforce

*Original tag:* iead\_inforce

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols in force, including international environmental agreements that have been terminated.

**3.1.21.5 Number of IEAs in force, not counting terminated IEAs (iead\_inforce\_noterm)**

*Long tag:* qog\_ei\_iead\_inforce\_noterm

*Original tag:* iead\_inforce\_noterm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols in force, not counting terminated international environmental agreements.

**3.1.21.6 Number of IEAs ratified per year (iead\_rat)**

*Long tag:* qog\_ei\_iead\_rat

*Original tag:* iead\_rat

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols ratified in the recorded year.

The users are encouraged to use "entry into force" instead of signatures and ratifications.

**3.1.21.7 Number of IEAs signed per year (iead\_sig)**

*Long tag:* qog\_ei\_iead\_sig

*Original tag:* iead\_sig

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols signed in the recorded year.

The data on signatures are incomplete. Signatures are fewer than ratifications or entry into force because secretariats, e.g., the UN Treaty Series, often do not keep track of signatures. The users are encouraged to use "entry into force" instead of signatures and ratifications.

**3.1.21.8 Number of terminated IEAs per year (iead\_term)**

*Long tag:* qog\_ei\_iead\_term

*Original tag:* iead\_term

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of international environmental agreements, amendments, and protocols terminated in the recorded year.

**3.1.21.9 Number of first withdrawals from IEAs per year (iead\_withdraw1)**

*Long tag:* qog\_ei\_iead\_withdraw1

*Original tag:* iead\_withdraw1

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of first-time withdrawals from international environmental agreements, amendments, and protocols in the recorded year.

**3.1.21.10 Number of second withdrawals from IEAs per year (iead\_withdraw2)**

*Long tag:* qog\_ei\_iead\_withdraw2

*Original tag:* iead\_withdraw2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Mitchell (2020), Mitchell et al. (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10664, Percent: 86.29

*Non-missing observations in chosen unit:* Sum: 9496, Percent: 31.87

*Lost observations in chosen unit:* Sum: 1168 Percent: 10.95

*Description:*

The number of second-time withdrawals from international environmental agreements, amendments, and protocols in the recorded year.

**3.1.22 The International Social Survey Programme. Environment Module**

Dataset by: International Social Survey Programme The International Social Survey Programme (ISSP) is an annual program of cross-national survey collaboration, covering a wide range of topics important for social science research. Since 1985 the ISSP provides international data sets, enabling cross-cultural and cross-temporal research. "Environment" is one of the eleven ISSP topic modules. Central themes are attitudes towards environment-related issues, such as environmental protection, respondents' behavior, and respondents' preferences regarding governmental measures on environmental protection. This dataset includes two types of variables: 1) percentage of respondents choosing a particular response option, and 2) average response per country, unweighted, primarily because weights are unavailable for some countries. Correlation between weighted and unweighted means for countries that do provide weights is above .95 for most of the included variables and does not go below .89. Link to the original source: <https://www.gesis.org/en/issp/modules>

**3.1.22.1 Worry about environment vs jobs (mean) (issp\_10am)***Long tag:* qog\_ei\_issp\_10am*Original tag:* issp\_10am*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)*Merge scores:**Non-missing observations in original unit:* Sum: 75, Percent: 0.61*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24*Lost observations in chosen unit:* Sum: 3 Percent: 4*Description:*

Average reply to the question: "How much do you agree or disagree with this statement? We worry too much about the future of the environment and not enough about prices and jobs today". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 10a.

In Environment II (2000) - question 4a.

In Environment I (1993) - question 5a.

A higher score means that smaller parts of the population think that there is too much worry about the environment. A lower score means that larger parts of the population think that there is too much worry about the environment and too little worry about prices and jobs.

**3.1.22.2 Unwillingness to pay higher prices (percent) (issp\_12ap)***Long tag:* qog\_ei\_issp\_12ap*Original tag:* issp\_12ap*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)*Merge scores:**Non-missing observations in original unit:* Sum: 75, Percent: 0.61*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24*Lost observations in chosen unit:* Sum: 3 Percent: 4*Description:*

Percent of replies "fairly unwilling" and "very unwilling" to 12a: "How willing would you be to pay much higher prices in order to protect the environment?". Original replies include: (1) Very willing, (2) Fairly willing, (3) Neither willing nor unwilling, (4) Fairly unwilling, (5) Very unwilling, (8) Can't choose.

In Environment III (2010) - question 12a.

In Environment II (2000) - question 7a.

In Environment I (1993) - question 8a.

A higher score means that fewer people are willing to pay higher prices for environmental protection. A lower score means that more people are willing to pay higher prices for environmental protection.

**3.1.22.3 Unwillingness to pay higher taxes (percent) (issp\_12bp)***Long tag:* qog\_ei\_issp\_12bp*Original tag:* issp\_12bp*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)*Merge scores:**Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Percent of replies *“fairly unwilling”* and *“very unwilling”* to 12b: *“And how willing would you be to pay much higher taxes in order to protect the environment?”*. Original replies include: (1) Very willing, (2) Fairly willing, (3) Neither willing nor unwilling, (4) Fairly unwilling, (5) Very unwilling, (8) Can’t choose.

In Environment III (2010) - question 12b.

In Environment II (2000) - question 7b.

In Environment I (1993) - question 8b.

A higher score means that fewer people are willing to pay more taxes for environmental protection. A lower score means that more people are willing to pay higher taxes for environmental protection.

#### **3.1.22.4 Unwillingness to cut in standard of living (percent) (issp\_12cp)**

*Long tag:* qog\_ei\_issp\_12cp

*Original tag:* issp\_12cp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Percent of replies *“fairly unwilling”* and *“very unwilling”* to 12c: *“And how willing would you be to accept cuts in your standard of living in order to protect the environment?”*. Original replies include: (1) Very willing, (2) Fairly willing, (3) Neither willing nor unwilling, (4) Fairly unwilling, (5) Very unwilling, (8) Can’t choose.

In Environment III (2010) - question 12c.

In Environment II (2000) - question 7c.

In Environment I (1993) - question 8c.

A higher score means that fewer people are willing to accept cuts in the standard of living for environmental protection. A lower score means that more people are willing to accept cuts in the standard of living for environmental protection.

#### **3.1.22.5 Individual action is insufficient (mean) (issp\_13am)**

*Long tag:* qog\_ei\_issp\_13am

*Original tag:* issp\_13am

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Average reply to 13a: *“How much do you agree or disagree with this statement? It is just too difficult for someone like me to do much about the environment?”*. (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly.



Replies (8) Can't choose are deleted.

In Environment III (2010) - question 13a.  
In Environment II (2000) - question 8a.  
In Environment I (1993) - question 9a.

A higher score means that fewer people believe that it is too difficult to do something about the environment as an individual. A lower score means that more people believe that it is too difficult to do something about the environment as an individual.

### 3.1.22.6 Environmental behavior (mean) (issp\_13bm)

*Long tag:* qog\_ei\_issp\_13bm

*Original tag:* issp\_13bm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Average reply to 13b: "How much do you agree or disagree with this statement? I do what is right for the environment, even when it costs more money or takes more time". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 13b.  
In Environment II (2000) - question 8b.  
In Environment I (1993) - question 9b.

A higher score means that fewer people are willing to spend more money/time to do what is best for the environment. A lower score means that more people are willing to spend more money/time to do what is right for the environment.

### 3.1.22.7 Claims about environmental threats are exaggerated (mean) (issp\_13em)

*Long tag:* qog\_ei\_issp\_13em

*Original tag:* issp\_13em

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 55, Percent: 0.45

*Non-missing observations in chosen unit:* Sum: 53, Percent: 0.18

*Lost observations in chosen unit:* Sum: 2 Percent: 3.64

*Description:*

Average reply to 13e: "How much do you agree or disagree with this statement? Many of the claims about environmental threats are exaggerated". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Answers (8) Can't choose are deleted.

In Environment III (2010) - question 13e.  
In Environment II (2000) - question 8e.  
In Environment I (1993) - question not part of the survey.

A higher score means that fewer people think that environmental treats are exaggerated. A lower score means that more people think that environmental threats are exaggerated.

### 3.1.22.8 Perceived vulnerability to environmental problems (mean) (issp\_13gm)

*Long tag:* qog\_ei\_issp\_13gm

*Original tag:* issp\_13gm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 32, Percent: 0.26

*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1

*Lost observations in chosen unit:* Sum: 1 Percent: 3.12

*Description:*

Average reply to 13g: "How much do you agree or disagree with this statement? Environmental problems have a direct effect on my everyday life". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 13g.

In Environment II (2000) - question not part of the survey.

In Environment I (1993) - question not part of the survey.

A higher score means that fewer people think that environmental problems affect everyday life. A lower score means that more people think that environmental problems affect everyday life.

### 3.1.22.9 Support for government action to make people comply (percent) (issp\_15ap)

*Long tag:* qog\_ei\_issp\_15ap

*Original tag:* issp\_15ap

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Percent of replies for 15a: "If you had to choose, which one of the following would be closest to your views? (2) Government should pass laws to make ordinary people protect the environment, even if it interferes with people's rights to make their own decisions". Other replies include (1) Government should let ordinary people decide for themselves how to protect the environment, even if it means they don't always do the right thing, and (8) Can't choose.

In Environment III (2010) - question 15a.

In Environment II (2000) - question 13a.

In Environment I (1993) - question 18a.

The higher the score the higher the belief that the government should pass laws to make people protect the environment. The lower the score the lower the belief that the government should pass laws to make people protect the environment.

### 3.1.22.10 Priority of future energy sources - fossil fuels (percent) (issp\_18p)

*Long tag:* qog\_ei\_issp\_18p

*Original tag:* issp\_18p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 32, Percent: 0.26

*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1

*Lost observations in chosen unit:* Sum: 1 Percent: 3.12

*Description:*

Percent of replies (1) Coal, oil and natural gas to 18: "To which of the following should [COUNTRY] give priority in order to meet its future energy needs?". Other replies include: (2) Nuclear power, (3) Solar, wind or water power, (4) Fuels made from crop, (5) None of them.

In Environment III (2010) - question 18.

In Environment II (2000) - question not part of the survey.

In Environment I (1993) - question not part of survey.

The higher the score the higher the percentage of people that prefers fossil fuels over other sources. The lower the score the lower the percentage of people that prefers fossil fuels over other sources.

### **3.1.22.11 Attitudes on international environmental agreements (mean) (issp\_19am)**

*Long tag:* qog\_ei\_issp\_19am

*Original tag:* issp\_19am

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 55, Percent: 0.45

*Non-missing observations in chosen unit:* Sum: 53, Percent: 0.18

*Lost observations in chosen unit:* Sum: 2 Percent: 3.64

*Description:*

Average reply to 19a: "How much do you agree or disagree with each of these statements? For environmental problems, there should be international agreements that [COUNTRY] and other countries should be made to follow". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 19a.

In Environment II (2000) - question 16a.

In Environment I (1993) - question not part of the survey.

A higher score means that there is less support in the population for international agreements. A lower score means that there is more support in the population towards international agreements.

### **3.1.22.12 Attitudes towards global environmental justice (mean) (issp\_19bm)**

*Long tag:* qog\_ei\_issp\_19bm

*Original tag:* issp\_19bm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 55, Percent: 0.45

*Non-missing observations in chosen unit:* Sum: 53, Percent: 0.18

*Lost observations in chosen unit:* Sum: 2 Percent: 3.64

*Description:*

Average reply to 19b: "How much do you agree or disagree with each of these statements? Poorer countries should be expected to make less effort than richer countries to protect the environment". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 19b.

In Environment II (2000) - question 16b.

In Environment I (1993) - question not part of the survey.

A higher score means that fewer people think that poorer countries should do less than rich countries to protect the environment. A lower score means that more people think that poorer countries should do less than rich countries to protect the environment.

### 3.1.22.13 Environment is most or next most important issue (percent) (issp\_1ap)

*Long tag:* qog\_ei\_issp\_1ap

*Original tag:* issp\_1ap

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 32, Percent: 0.26

*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1

*Lost observations in chosen unit:* Sum: 1 Percent: 3.12

*Description:*

Percent replying "The environment" to 1a: "Which of these issues is the most important for [COUNTRY] today?" plus percent replying "The environment" to 1b: "Which of these issues is the next most important for [COUNTRY] today?". The issues in the list include: (1) Health care, (2) Education, (3) Crime, (4) The environment, (5) Immigration, (6) The economy, (7) Terrorism, (8) Poverty, (9) None of these, (98) Can't choose.

In Environment III (2010) - questions 1a and 1b.

In Environment II (2000) - question not part of the survey.

In Environment I (1993) - question not part of the survey.

The higher the score the higher the percentage of the population that prioritizes the environment as the most or second most important issue. The lower the score the smaller the percentage of the population that prioritizes the environment as the most or second most important issue.

### 3.1.22.14 Reported extent of recycling (mean) (issp\_20am)

*Long tag:* qog\_ei\_issp\_20am

*Original tag:* issp\_20am

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Average reply to 20a: "How often do you make a special effort to sort glass or tins or plastic or newspapers and so on for recycling?". (1) Always, (2) Often, (3) Sometimes, (4) Never. Responses (8) Recycling not available where I live are deleted.

In Environment III (2010) - question 20a.  
 In Environment II (2000) - question 19a.  
 In Environment I (1993) - question 19a.

A higher score means that fewer people make an effort to recycle correctly. A lower score means that more people make an effort to recycle correctly.

### 3.1.22.15 Recycling not available (percent) (issp\_20ap)

*Long tag:* qog\_ei\_issp\_20ap

*Original tag:* issp\_20ap

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 41, Percent: 0.33

*Non-missing observations in chosen unit:* Sum: 39, Percent: 0.13

*Lost observations in chosen unit:* Sum: 2 Percent: 4.88

*Description:*

Percent of replies (8) Recycling not available where I live to 20a: "How often do you make a special effort to sort glass or tins or plastic or newspapers and so on for recycling?";.

In Environment III (2010) - answer not included.  
 In Environment II (2000) - question 19a.  
 In Environment I (1993) - question 19a.

A higher score means that more people have access to recycling facilities. A lower score means that fewer people have access to recycling facilities.

### 3.1.22.16 Reducing energy use for the environment (mean) (issp\_20dm)

*Long tag:* qog\_ei\_issp\_20dm

*Original tag:* issp\_20dm

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 32, Percent: 0.26

*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1

*Lost observations in chosen unit:* Sum: 1 Percent: 3.12

*Description:*

Average reply to 20d: "How often do you reduce the energy or fuel you use at home for environmental reasons?";. (1) Always, (2) Often, (3) Sometimes, (4) Never.

In Environment III (2010) - question 20d.  
 In Environment II (2000) - question not part of the survey.  
 In Environment I (1993) - question not part of the survey.

A higher score means that fewer people make a special effort to reduce energy consumption for environmental reasons. A lower score means that more people make a special effort to reduce energy consumption for environmental reasons.

### 3.1.22.17 Membership in environmental groups (percent) (issp\_21p)

*Long tag:* qog\_ei\_issp\_21p

*Original tag:* issp\_21p

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Percent of "yes"-replies to 21: "Are you a member of any group whose main aim is to preserve or protect the environment?"

In Environment III (2010) - question 21.

In Environment II (2000) - question 20.

In Environment I (1993) - question 20.

A higher score means that more people are members of environmental groups. A lower score means that fewer people are members of environmental groups.

### 3.1.22.18 Signed petitions about environmental issues (percent) (issp\_22ap)

*Long tag:* qog\_ei\_issp\_22ap

*Original tag:* issp\_22ap

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Percent of "yes"-replies to 22a: "In the last five years, have you signed a petition about an environmental issue?"

In Environment III (2010) - question 22a.

In Environment II (2000) - question 21a.

In Environment I (1993) - question 21a.

A higher score means that more people signed petitions for environmental issues in the 2 years prior to the survey. A lower score means that fewer people signed petitions for environmental issues in the 2 years prior to the survey.

### 3.1.22.19 Given money to an environmental group (percent) (issp\_22bp)

*Long tag:* qog\_ei\_issp\_22bp

*Original tag:* issp\_22bp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 74, Percent: 0.6

*Non-missing observations in chosen unit:* Sum: 71, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4.05

*Description:*

Percent of "yes"-replies to 22b: "In the last five years, have you given money to an environmental group (including NGOs and lobby groups)?"

In Environment III (2010) - question 22b.  
 In Environment II (2000) - question 21b.  
 In Environment I (1993) - question 21b.

A higher score means that more people gave money to environmental groups in the 5 years prior to the survey. A lower score means that fewer people gave money to environmental groups in the 5 years prior to the survey.

### **3.1.22.20 Taken part in a protest/demonstration about environmental issues (percent) (issp\_22cp)**

*Long tag:* qog\_ei\_issp\_22cp

*Original tag:* issp\_22cp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 74, Percent: 0.6

*Non-missing observations in chosen unit:* Sum: 71, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4.05

*Description:*

Percent of "yes"-replies to 22c: "In the last five years, have you taken part in a protest or demonstration about an environmental issue?"

In Environment III (2010) - question 22c.  
 In Environment II (2000) - question 21c.  
 In Environment I (1993) - question 21c.

A higher score means that more people participated in environmental protests in the 5 years prior to the survey. A lower score means that fewer people participated in environmental protests in the 5 years prior to the survey.

### **3.1.22.21 Environmental concern (mean) (issp\_6m)**

*Long tag:* qog\_ei\_issp\_6m

*Original tag:* issp\_6m

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* ISSP Research Group (1995, 2003, 2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 32, Percent: 0.26

*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1

*Lost observations in chosen unit:* Sum: 1 Percent: 3.12

*Description:*

Average reply to the question: "Generally speaking, how concerned are you about environmental issues?". (1) Not at all concerned - (5) Very concerned. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 6.  
 In Environment II (2000) - question not part of the survey.  
 In Environment I (1993) - question not part of the survey.

A higher score means that more people are concerned about environmental issues. A lower score means that fewer people are concerned about environmental issues.

**3.1.22.22 Knowledge about causes of environmental problems (mean) (issp\_8am)***Long tag:* qog\_ei\_issp\_8am*Original tag:* issp\_8am*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)*Merge scores:**Non-missing observations in original unit:* Sum: 32, Percent: 0.26*Non-missing observations in chosen unit:* Sum: 31, Percent: 0.1*Lost observations in chosen unit:* Sum: 1 Percent: 3.12*Description:*

Average reply to 8a: "How much do you feel you know about the causes of these sorts of environmental problems?". (1) Know nothing at all - (5) Know a great deal. Replies (8) Can't choose are deleted. "These sorts of environmental problems" refer to (1) Air pollution, (2) Chemicals and pesticides, (3) Water shortage, (4) Water pollution, (5) Nuclear waste, (6) Domestic waste disposal, (7) Climate change, (8) Genetically modified foods, (9) Using up our natural resources.

In Environment III (2010) - question 8a.

In Environment II (2000) - question not part of the survey.

In Environment I (1993) - question not part of the survey.

A higher score means that more people feel that they know about the causes of environmental problems. A lower score means that fewer people feel that they know about the causes of environmental problems.

**3.1.22.23 Knowledge about solutions to environmental problems (mean) (issp\_8bm)***Long tag:* qog\_ei\_issp\_8bm*Original tag:* issp\_8bm*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)*Merge scores:**Non-missing observations in original unit:* Sum: 31, Percent: 0.25*Non-missing observations in chosen unit:* Sum: 30, Percent: 0.1*Lost observations in chosen unit:* Sum: 1 Percent: 3.23*Description:*

Average reply to 8b: "And how much do you feel you know about solutions to these sorts of environmental problems?". (1) Know nothing at all - (5) Know a great deal. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 8b.

In Environment II (2000) - question not part of the survey.

In Environment I (1993) - question not part of the survey.

A higher score means that more people feel that they know about the solutions to environmental problems. A lower score means that fewer people feel that they know about the solutions to environmental problems.

**3.1.22.24 Belief in science (mean) (issp\_9am)***Long tag:* qog\_ei\_issp\_9am*Original tag:* issp\_9am*Dataset citation:* Povitkina et al. (2021)*Variable citation:* ISSP Research Group (1995, 2003, 2019)



*Merge scores:*

*Non-missing observations in original unit:* Sum: 75, Percent: 0.61

*Non-missing observations in chosen unit:* Sum: 72, Percent: 0.24

*Lost observations in chosen unit:* Sum: 3 Percent: 4

*Description:*

Average reply to 9a: "How much do you agree or disagree with this statement? We believe too often in science, and not enough in feelings and faith". (1) Agree strongly, (2) Agree, (3) Neither agree nor disagree, (4) Disagree, (5) Disagree strongly. Replies (8) Can't choose are deleted.

In Environment III (2010) - question 9a.

In Environment II (2000) - question 3a.

In Environment I (1993) - question 4a.

A higher score means that there are fewer people who think that we believe in science too often and not enough in feelings and faith. A lower score means that there are more people who think that we believe in science too often and not enough in feelings and faith.

**3.1.23 Natural Resource Management Index Data**

Dataset by: Natural Resource Management Index The Natural Resource Protection and Child Health Indicators, 2019 Release, is produced in support of the U.S. Millennium Challenge Corporation (MCC) as selection criteria for funding eligibility. The Natural Resource Protection Indicator (NRPI) and Child Health Indicator (CHI) are based on proximity-to-target scores ranging from 0 to 100 (at target). The NRPI covers 234 countries and is calculated based on the weighted average percentage of biomes under protected status. The CHI is a composite index for 195 countries derived from the average of three proximity-to-target scores for access to at least basic water and sanitation, along with child mortality. The 2019 release includes a consistent time series of NRPI scores for 2015 to 2019 and CHI scores for 2010 to 2018. Link to the original source: <http://sedac.ciesin.columbia.edu/data/collection/nrmi>

**3.1.23.1 Natural Resource Protection Indicator (nrmi\_nrpi)**

*Long tag:* qog\_ei\_nrmi\_nrpi

*Original tag:* nrmi\_nrpi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Center for International Earth Science Information Network CIESIN (2019)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 970, Percent: 7.85

*Non-missing observations in chosen unit:* Sum: 850, Percent: 2.85

*Lost observations in chosen unit:* Sum: 120 Percent: 12.37

*Description:*

Natural Resource Protection Indicator assesses whether a country is protecting at least 17percent of all of its biomes (e.g. deserts, forests, grasslands, aquatic, and tundra). It is designed to capture the comprehensiveness of a government's commitment to habitat preservation and biodiversity protection. The World Wildlife Fund provides the underlying biome data, and the United Nations Environment Program World Conservation Monitoring Center provides the underlying data on protected areas.

**3.1.24 Policy Instruments for the Environment**

Dataset by: Organisation for Economic Co-operation and Development Policy Instruments for the Environment (PINE) is originally developed by OECD in co-operation with the European Environment Agency (EEA). The database contains detailed qualitative and quantitative information on environmentally related taxes, fees and charges, tradable permits, deposit-refund

systems, environmentally motivated subsidies, and voluntary approaches used for environmental policy. The dataset covers OECD member countries, accession countries and selected non-OECD countries since the year 1994, and it has been cross-validated and complemented with Revenue statistics from the OECD Tax statistics database and official national sources. Link to the original source: <http://oe.cd/pine>

#### 3.1.24.1 Climate change related tax revenue (percent of GDP) (oecd\_cctr\_gdp)

*Long tag:* qog\_ei\_oecd\_cctr\_gdp

*Original tag:* oecd\_cctr\_gdp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020d)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2099, Percent: 16.98

*Non-missing observations in chosen unit:* Sum: 2021, Percent: 6.78

*Lost observations in chosen unit:* Sum: 78 Percent: 3.72

*Description:*

No entry

#### 3.1.24.2 Climate change related tax revenue (percent of total tax revenue) (oecd\_cctr\_tot)

*Long tag:* qog\_ei\_oecd\_cctr\_tot

*Original tag:* oecd\_cctr\_tot

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020d)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2208, Percent: 17.87

*Non-missing observations in chosen unit:* Sum: 2130, Percent: 7.15

*Lost observations in chosen unit:* Sum: 78 Percent: 3.53

*Description:*

No entry

#### 3.1.24.3 Environmentally related tax revenue (percent of GDP) (oecd\_etr\_gdp)

*Long tag:* qog\_ei\_oecd\_etr\_gdp

*Original tag:* oecd\_etr\_gdp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020d)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2242, Percent: 18.14

*Non-missing observations in chosen unit:* Sum: 2164, Percent: 7.26

*Lost observations in chosen unit:* Sum: 78 Percent: 3.48

*Description:*

No entry

#### 3.1.24.4 Environmentally related tax revenue (percent total tax revenue) (oecd\_etr\_tot)

*Long tag:* qog\_ei\_oecd\_etr\_tot

*Original tag:* oecd\_etr\_tot

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020d)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2201, Percent: 17.81

*Non-missing observations in chosen unit:* Sum: 2123, Percent: 7.13

*Lost observations in chosen unit:* Sum: 78 Percent: 3.54

*Description:*

No entry

### 3.1.25 oecd\_multi

Missing codebook section entry

#### 3.1.25.1 Environmentally adjusted multifactor productivity growth (oecd\_eampg)

*Long tag:* qog\_ei\_oecd\_eampg

*Original tag:* oecd\_eampg

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020b),  
Rodríguez et al. (2018)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1109, Percent: 8.97

*Non-missing observations in chosen unit:* Sum: 1109, Percent: 3.72

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

No entry

#### 3.1.25.2 Pollution adjusted GDP growth (oecd\_polagdpg)

*Long tag:* qog\_ei\_oecd\_polagdpg

*Original tag:* oecd\_polagdpg

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020b),  
Rodríguez et al. (2018)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1109, Percent: 8.97

*Non-missing observations in chosen unit:* Sum: 1109, Percent: 3.72

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

No entry

### 3.1.26 Environmental Protection Expenditure Accounts (EPEA)

Dataset by: Organisation for Economic Co-operation and Development The Environmental Protection Expenditure Account (EPEA) is a monetary description of environmental protection activities in accordance with the System of Environmental-Economic Accounting (SEEA) central framework. It is coherent with the European System of Accounts (ESA 2010) which applies to national accounts and related satellite accounts. Link to the original source: <https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-17-004>

#### 3.1.26.1 Environmental Protection Expenditure Accounts (oecd\_epea)

*Long tag:* qog\_ei\_oecd\_epea

*Original tag:* oecd\_epea

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Organisation for Economic Co-operation and Development (OECD) (2020a)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 216, Percent: 1.75

*Non-missing observations in chosen unit:* Sum: 216, Percent: 0.72

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

No entry

### 3.1.27 Environmental Policy Stringency Index

Dataset by: Organisation for Economic Co-operation and Development The OECD Environmental Policy Stringency Index (EPS) is a country-specific and internationally comparable measure of the stringency of environmental policy. Link to the original source: <https://www.oecd.org/economy/growth/Do-environmental-policiesmatter-for-productivity-growth.htm>

#### 3.1.27.1 Environmental Policy Stringency Index (oecd\_eps)

*Long tag:* qog\_ei\_oecd\_eps

*Original tag:* oecd\_eps

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Botta & Kozluk (2014)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 799, Percent: 6.47

*Non-missing observations in chosen unit:* Sum: 799, Percent: 2.68

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

No entry

### 3.1.28 Exposure to PM2.5 in Countries and Regions

Dataset by: Organisation for Economic Co-operation and Development The underlying PM2.5 concentration estimates are taken from the Global Burden of Disease (GBD) 2019 project. They are derived by integrating satellite observations, chemical transport models, and measurements from ground monitoring station networks. The concentration estimates are population-weighted using gridded population datasets from the Joint Research Center Global Human Settlement project. These are produced by distributing census-derived population estimates from the Gridded Population of the World, version 4 from the NASA Socioeconomic Data and Applications Center according to the density and distribution of built-up areas. For political and administrative boundaries, OECD (2020) territorial grid units are used where available, for the remaining countries, the FAO (2015) Global Administrative Unit Layers (GAUL 2014) are used (see below for details). The OECD (2020) Functional Urban Area definition is used for cities. The accuracy of these exposure estimates varies considerably by location. Accuracy is poorer in areas with few monitoring stations and in areas with very high concentrations such as Africa, the Middle-East and South Asia. Accuracy is generally good in regions with dense monitoring station networks (such as most advanced economies). See Shaddick et al. (2018) for further details. See Green Growth dataset for further measures of PM exposure. Link to the original source: [https://www.oecd-ilibrary.org/environment/data/oecd-environmentstatistics\\_env-data-en](https://www.oecd-ilibrary.org/environment/data/oecd-environmentstatistics_env-data-en)

#### 3.1.28.1 Percentage of population exposed to more than 15 micrograms per cubic meter (oecd\_pm25ex15p)

*Long tag:* qog\_ei\_oecd\_pm25ex15p

*Original tag:* oecd\_pm25ex15p

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2145, Percent: 17.36

*Non-missing observations in chosen unit:* Sum: 1947, Percent: 6.53

*Lost observations in chosen unit:* Sum: 198 Percent: 9.23

*Description:*

No entry

### **3.1.28.2 Percentage of population exposed to more than 15 micrograms per cubic meter (oecd\_pm25ex25p)**

*Long tag:* qog\_ei\_oecd\_pm25ex25p

*Original tag:* oecd\_pm25ex25p

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2145, Percent: 17.36

*Non-missing observations in chosen unit:* Sum: 1947, Percent: 6.53

*Lost observations in chosen unit:* Sum: 198 Percent: 9.23

*Description:*

No entry

### **3.1.29 The Ocean Health Index Data**

Dataset by: The Ocean Health Index The Ocean Health Index is a valuable tool for the ongoing assessment of ocean health. By providing a means to advance comprehensive ocean policy and compare future progress, the Index can inform decisions about how to use or protect marine ecosystems. The Index is a collaborative effort, made possible through contributions from more than 65 scientists/ocean experts and partnerships between organizations including the National Center for Ecological Analysis and Synthesis, Sea Around Us, Conservation International, National Geographic, and the New England Aquarium. The Index assesses the ocean based on 10 widely-held public goals for a healthy ocean. They are: Food Provision, Artisanal Fishing Opportunities, Natural Products, Carbon Storage, Coastal Protection, Sense of Place, Coastal Livelihoods Economies, Tourism Recreation, Clean Waters, Biodiversity. Link to the original source: <http://www.oceanhealthindex.org>

#### **3.1.29.1 Fisheries management effectiveness and opportunity (ohi\_aoacc)**

*Long tag:* qog\_ei\_ohi\_aoacc

*Original tag:* ohi\_aoacc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Fisheries management effectiveness and opportunity. The effectiveness of fisheries management in all countries with coastal areas is assessed by using a combination of surveys, empirical data, and enquiries to fisheries experts. They evaluated six aspects of each management regime: Scientific Robustness, Policy Transparency, Implementation Capacity, Subsidies, Fishing Effort, and Foreign Fishing, scoring each category from 0 to 100.

For more details on the variable construction, see the original source:

Mora, C., Myers, R.A., Coll, M., Libralato, S., Pitcher, T.J., Sumaila, R.U., Worm, B. (2009). Management Effectiveness of the World's Marine Fisheries. *PLoS Biol*, 7(6), e1000131.

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.2 Ocean acidification (ohi\_caacid)

*Long tag:* qog\_ei\_ohi\_caacid

*Original tag:* ohi\_caacid

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Ocean acidification. The Ocean acidification layer models the difference in global distribution changes in the aragonite saturation state (arag) between pre-industrial (~1870) and modern times (2000-2009) as a proxy for ocean acidification due to human influences.

For more details on the variable construction, see the original sources:

Feely, R., Doney, S. & Cooley, S. (2009) Ocean acidification: present conditions and future changes in a high-CO2 world. *Oceanography* 22:36-47.

and

J. Afflerbach et al. (2015). [https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures\\_OceanAcidification/v2015](https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures_OceanAcidification/v2015)

When using this variable, please cite both the OHI project and the original sources.

### 3.1.29.3 Coastal human population as a proxy for trend in trash (ohi\_chp)

*Long tag:* qog\_ei\_ohi\_chp

*Original tag:* ohi\_chp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 147, Percent: 1.19

*Non-missing observations in chosen unit:* Sum: 127, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.61

*Description:*

Coastal human population as a proxy for trend in trash. For more details on the variable construction, see the original source:

CIESIN & CIAT (Center for International Earth Science Information Network / Columbia University, & Centro Internacional de Agricultura Tropical) (2005). Gridded Population of the World, Version 3 (GPWv3): Population Density Grid, Future Estimates. Palisades, NY. [NASA Socioeconomic Data and Applications Center (SEDAC)].

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.4 Sea level rise (ohi\_csslr)

*Long tag:* qog\_ei\_ohi\_csslr

*Original tag:* ohi\_csslr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Sea level rise. For more details on the variable construction, see the original sources:

Nicholls R. J. and Cazenave A. (2010). Sea-level rise and its impact on coastal zones. *Science* 328: 1517-1520.

and

AVISO Satellite Altimetry Data.

and

J. Afflerbach et al. (2015).  
([https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures\\_SeaLevelRise/v2015](https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures_SeaLevelRise/v2015))

When using this variable, please cite both the OHI project and the original sources.

### 3.1.29.5 Sea surface temperature (SST) anomalies (ohi\_csst)

*Long tag:* qog\_ei\_ohi\_csst

*Original tag:* ohi\_csst

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Sea surface temperature (SST) anomalies. SST of the ocean is indicated by measurements taken at depths that range from 1 millimeter to 20 meters. This measurement does not indicate absolute temperature at a location, but instead determines the number of positive temperature deviations (anomalies) that exceed the natural range of variation for a given location, i.e. the frequency with which a location experiences unnaturally warm temperature.

For more details on the variable construction, see the original sources:

AVHRR Pathfinder Version 5.0 SST data.

and

Casey, K. S., Brandon, T. B., Cornillon, P., and Evans, R. (2010). The past, present and future of the AVHRR Pathfinder SST Program, *Oceanography from Space: Revisited*, eds. V. Barale, J.F.R. Gower, and L. Alberotanza, Springer.

and

J. Afflerbach et al. (2015).  
([https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures\\_SST](https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures_SST))

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.6 UV radiation (ohi\_cuv)

*Long tag:* qog\_ei\_ohi\_cuv

*Original tag:* ohi\_cuv

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

UV radiation. Ultraviolet radiation (UVR) is the portion of solar radiation with wavelengths of 200-400 nanometers (nm). UV Radiation was measured as the number of times in each 1-degree cell that the monthly average exceeded the climatological mean +1 standard deviation. These values were summed across the 12 months to provide a single value, ranging from 0-19.

For more details on the variable construction, see the original sources:

Goddard Earth Sciences Data and Information Services Center (GES DISC).

and

J. Afflerbach et al. (2015).  
([https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures\\_UV](https://github.com/OHI-Science/ohiprep/tree/master/globalprep/Pressures_UV))

When using this variable, please cite both the OHI project and the original sources.

### 3.1.29.7 High bycatch caused by artisanal fishing (ohi\_fah)

*Long tag:* qog\_ei\_ohi\_fah

*Original tag:* ohi\_fah

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 19, Percent: 0.06

*Lost observations in chosen unit:* Sum: 4 Percent: 17.39

*Description:*

High bycatch caused by artisanal fishing. For more details on the variable construction, see the original source:

Reefs at Risk Revisited (<http://www.wri.org/publication/reefs-at-risk-revisited>).

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.8 High bycatch caused by commercial fishing (ohi\_fchb)

*Long tag:* qog\_ei\_ohi\_fchb

*Original tag:* ohi\_fchb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)



*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

High bycatch caused by commercial fishing. For more details on the variable construction, see the original source:

Halpern, B. S. et al. (2008) A global map of human impact on marine ecosystems. *Science*, 3199(5865): 948-952.

When using this variable, please cite both the OHI project and the original source.

**3.1.29.9 Low bycatch caused by commercial fishing (ohi\_fclb)**

*Long tag:* qog\_ei\_ohi\_fclb

*Original tag:* ohi\_fclb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Low bycatch caused by commercial fishing. For more details on the variable construction, see the original source:

Halpern, B. S. et al. (2008) A global map of human impact on marine ecosystems. *Science*, 3199(5865): 948-952.

When using this variable, please cite both the OHI project and the original source.

**3.1.29.10 CBD survey: habitat (ohi\_hab)**

*Long tag:* qog\_ei\_ohi\_hab

*Original tag:* ohi\_hab

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD survey: habitat. A resilience measure based on questions 153(a,b,c,e,g) and 158(a,b,c,f,g,h) from The Convention on Biological Diversity country questionnaire (Third National Report to the CBD, from 2005).

Question 153: Do your country's strategies and action plans include the following:

- a) Developing new marine and coastal protected areas;
- b) Improving the management of existing marine and coastal protected areas;
- c) Building capacity within the country for management of marine and coastal resources, including through educational programmes and targeted research initiatives;
- e) Protection of areas important for reproduction, such as spawning and nursery areas;
- g) Controlling excessive fishing and destructive fishing practices?

Question 158: Which of the following statements can best describe the current status of marine and coastal protected areas in your country:

- a) Marine and coastal protected areas have been declared and gazetted;
- b) Management plans for these marine and coastal protected areas have been developed with involvement of all stakeholders;
- c) Effective management with enforcement and monitoring has been put in place;
- f) The national system of marine and coastal protected areas includes areas managed for purpose of sustainable use, which may allow extractive activities;
- g) The national system of marine and coastal protected areas includes areas which exclude extractive uses;
- h) The national system of marine and coastal protected areas is surrounded by sustainable management practices over the wider marine and coastal environment?

For more details on the variable construction, see the original sources:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>).

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.11 CBD survey: coastal habitat (ohi\_habcom)

*Long tag:* qog\_ei\_ohi\_habcom

*Original tag:* ohi\_habcom

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD survey: coastal habitat. For more details on the variable construction, see the original sources:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>).

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.12 CBD survey: ocean habitat (ohi\_habeez)

*Long tag:* qog\_ei\_ohi\_habeez

*Original tag:* ohi\_habeez

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD survey: ocean habitat. For more details on the variable construction, see the original sources:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>).

When using this variable, please cite both the OHI project and the original source.

**3.1.29.13 Coastal population density as a proxy for intertidal habitat destruction (ohi\_hdinter)**

*Long tag:* qog\_ei\_ohi\_hdinter

*Original tag:* ohi\_hdinter

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Coastal population density as a proxy for intertidal habitat destruction. For more details on the variable construction, see the original sources:

CIESIN & CIAT (Center for International Earth Science Information Network /Columbia University & Centro Internacional de Agricultura Tropical) (2005). Gridded Population of the World, Version 3 (GPWv3): Population Density Grid, Future Estimates. Palisades, NY.

and

NASA Socioeconomic Data and Applications Center (SEDAC)

and

Halpern, B. S. et. al. (2008) A global map of human impact on marine ecosystems. *Science*, 3199(5865): 948-952.

When using this variable, please cite both the OHI project and the original sources.

**3.1.29.14 Bycatch by artisanal fishing - hard bottom habitat destruction (ohi\_hshb)**

*Long tag:* qog\_ei\_ohi\_hshb

*Original tag:* ohi\_hshb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 23, Percent: 0.19

*Non-missing observations in chosen unit:* Sum: 19, Percent: 0.06

*Lost observations in chosen unit:* Sum: 4 Percent: 17.39

*Description:*

High bycatch artisanal fishing practices as a proxy for subtidal hard bottom habitat destruction. For more details on the variable construction, see the original sources:

Reefs at Risk Revisited (<http://www.wri.org/publication/reefs-at-risk-revisited>).

When using this variable, please cite both the OHI project and the original source.

**3.1.29.15 Demersal destructive fishing - soft bottom habitat destruction (ohi\_hssb)**

*Long tag:* qog\_ei\_ohi\_hssb

*Original tag:* ohi\_hssb

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Demersal destructive commercial fishing practices relative to soft-bottom habitat area as a proxy for soft bottom habitat destruction. For more details on the variable construction, see the original source:

Sea Around Us Project (<http://www.seaaroundus.org/>)

When using this variable, please cite both the OHI project and the original source.

### **3.1.29.16 Coastal protected areas inland 1km (ohi\_lpai)**

*Long tag:* qog\_ei\_ohi\_lpai

*Original tag:* ohi\_lpai

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Coastal protected areas inland 1km. For more details on the variable construction, see the original sources:

United Nations - World Conservation Monitoring Centre's World Database on Protected Areas (WDPA) through [Protected Planet (<http://www.protectedplanet.net/>)].

When using this variable, please cite both the OHI project and the original source.

### **3.1.29.17 Coastal marine protected areas offshore 3km (ohi\_lpao)**

*Long tag:* qog\_ei\_ohi\_lpao

*Original tag:* ohi\_lpao

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Coastal marine protected areas offshore 3km. For more details on the variable construction, see the original sources:

United Nations - World Conservation Monitoring Centre's World Database on Protected Areas (WDPA) through [Protected Planet (<http://www.protectedplanet.net/>)].

When using this variable, please cite both the OHI project and the original source.

**3.1.29.18 CBD Survey: Mariculture (ohi\_maricul)**

*Long tag:* qog\_ei\_ohi\_maricul

*Original tag:* ohi\_maricul

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD Survey: Mariculture. A resilience measure based on questions 158(d) and 159(a-1) from The Convention on Biological Diversity country questionnaire (Third National Report to the CBD, from 2005).

Question 158: Which of the following statements can best describe the current status of marine and coastal protected areas in your country:

d) A national system or network of marine and coastal protected areas is under development?

Question 159: Is your country applying the following techniques aimed at minimizing adverse impacts of mariculture on marine and coastal biodiversity?

- a) Application of environmental impact assessments for mariculture developments;
- b) Development and application of effective site selection methods in the framework of integrated marine and coastal area management;
- c) development of effective methods for effluent and waste control;
- d) Development of appropriate genetic resource management plans at the hatchery level;
- e) Development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature;
- f) If seed collection from nature cannot be avoided, development of environmentally sound practices for spat collecting operations, including use of selective fishing gear to avoid by-catch;
- g) Use of native species and subspecies in mariculture;
- h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids;
- i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity;
- j) Minimizing the use of antibiotics through better husbandry techniques;
- k) Use of selective methods in commercial fishing to avoid or minimize bycatch;
- l) Considering traditional knowledge, where applicable, as a source to develop sustainable mariculture techniques.

For more details on the variable construction, see the original source:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>)-

When using this variable, please cite both the OHI project and the original source.

**3.1.29.19 Areas of observed blast (dynamite) fishing (ohi\_npblast)**

*Long tag:* qog\_ei\_ohi\_npblast

*Original tag:* ohi\_npblast

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 20, Percent: 0.16

*Non-missing observations in chosen unit:* Sum: 18, Percent: 0.06

*Lost observations in chosen unit:* Sum: 2 Percent: 10

*Description:*

Areas of observed blast (dynamite) fishing. For more details on the variable construction, see the original source:

Reefs at Risk Revisited (<http://www.wri.org/publication/reefs-at-risk-revisited>)

When using this variable, please cite both the OHI project and the original source.

### **3.1.29.20 Areas of observed poison fishing (ohi\_npcyan)**

*Long tag:* qog\_ei\_ohi\_npcyan

*Original tag:* ohi\_npcyan

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 14, Percent: 0.11

*Non-missing observations in chosen unit:* Sum: 12, Percent: 0.04

*Lost observations in chosen unit:* Sum: 2 Percent: 14.29

*Description:*

Areas of observed poison fishing. For more details on the variable construction, see the original source:

Reefs at Risk Revisited (<http://www.wri.org/publication/reefs-at-risk-revisited>)

When using this variable, please cite both the OHI project and the original source.

### **3.1.29.21 The Ocean Health Index (ohi\_ohi)**

*Long tag:* qog\_ei\_ohi\_ohi

*Original tag:* ohi\_ohi

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1208, Percent: 9.78

*Non-missing observations in chosen unit:* Sum: 1048, Percent: 3.52

*Lost observations in chosen unit:* Sum: 160 Percent: 13.25

*Description:*

The Ocean Health Index establishes reference points for achieving ten widely accepted socio-ecological objectives and scores the oceans adjacent to 171 countries and territories on how successfully they deliver these goals. Evaluated globally and by country, these ten public goals represent the wide range of benefits that a healthy ocean can provide; each country's overall score is the average of its respective goal scores. The ten socio-ecological objectives are: Food Provision, Artisanal Fishing Opportunities, Natural Products, Carbon Storage, Coastal Protection, Coastal Livelihoods  
 amp; Economies, Tourism  
 amp; Recreation, Sense of Place, Clean Waters, Biodiversity. The index varies from 0 to 100.

### **3.1.29.22 Coastal chemical pollution within 3 nm offshore (ohi\_pc3)**

*Long tag:* qog\_ei\_ohi\_pc3

*Original tag:* ohi\_pc3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Coastal chemical pollution within 3 nautical miles (nm) offshore. For more details on the variable construction, see the original sources:

Halpern, B. S. et al. (2015). Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nature Communications* 6(7615).

When using this variable, please cite both the OHI project and the original sources.

and

FAO's statistical database FAOSTAT  
([http://faostat3.fao.org/faostat-gateway/go/to/browse/R/\\*/E](http://faostat3.fao.org/faostat-gateway/go/to/browse/R/*/E)).

When using this variable, please cite both the OHI project and the original sources.

**3.1.29.23 Chemical pollution (ohi\_pchem)**

*Long tag:* qog\_ei\_ohi\_pchem

*Original tag:* ohi\_pchem

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Chemical pollution is measured as the average of land-based organic pollution, land-based inorganic pollution, and ocean-based pollution from commercial shipping and port as proxies.

For more details on the variable construction, see the original sources:

Halpern, B. S. et al. (2015). Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nature Communications* 6(7615).

and

FAO's statistical database FAOSTAT  
([http://faostat3.fao.org/faostat-gateway/go/to/browse/R/\\*/E](http://faostat3.fao.org/faostat-gateway/go/to/browse/R/*/E)).

When using this variable, please cite both the OHI project and the original source.

**3.1.29.24 Coastal fertilizer pollution (ohi\_pn3)**

*Long tag:* qog\_ei\_ohi\_pn3

*Original tag:* ohi\_pn3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Coastal fertilizer pollution as a proxy for nutrient pollution within 3 nautical miles (nm) offshore. For more details on the variable construction, see the original sources:

Halpern, B. S. et al. (2015). Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nature Communications* 6(7615).

and

FAO's statistical database FAOSTAT  
([http://faostat3.fao.org/faostat-gateway/go/to/browse/R/\\*/E](http://faostat3.fao.org/faostat-gateway/go/to/browse/R/*/E)).

When using this variable, please cite both the OHI project and the original sources.

### **3.1.29.25 Fertilizer pollution as a proxy for nutrient pollution (ohi\_pnutrient)**

*Long tag:* qog\_ei\_ohi\_pnutrient

*Original tag:* ohi\_pnutrient

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Fertilizer pollution as a proxy for nutrient pollution. For more details on the variable construction, see the original sources:

Halpern, B. S. et al. (2015). Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nature Communications* 6(7615).

and

FAO's statistical database FAOSTAT  
([http://faostat3.fao.org/faostat-gateway/go/to/browse/R/\\*/E](http://faostat3.fao.org/faostat-gateway/go/to/browse/R/*/E)).

When using this variable, please cite both the OHI project and the original source.

### **3.1.29.26 Trash pollution (ohi\_ptrash)**

*Long tag:* qog\_ei\_ohi\_ptrash

*Original tag:* ohi\_ptrash

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Trash pollution. Estimated by the tons of litter per km of beach collected during beach



cleanups organized by the Ocean Conservancy's Trash Free Seas Alliance in 96 countries and locations.

For more details on the variable construction, see the original sources:

Eriksen M., Lebreton, L. C. M., Carson, H. S., Thiel, M., Moore, C. J. and Borerro, J. C. (2014). Plastic pollution in the world's oceans: more than 5 trillion plastic pieces weighing over 250,000 tons afloat at sea. PLoS ONE 9:e111913.

and

J. Afferbach et al. (2015). [Methods]([https://github.com/OHI-Science/ohiprep/tree/master/globalprep/CW\\_pressure\\_trash](https://github.com/OHI-Science/ohiprep/tree/master/globalprep/CW_pressure_trash))

When using this variable, please cite both the OHI project and the original sources.

### 3.1.29.27 Alien Species (ohi\_saali)

*Long tag:* qog\_ei\_ohi\_saali

*Original tag:* ohi\_saali

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Alien species are non-indigenous organisms introduced into an ecosystem that is not their native habitat either by accident or intentionally. Measured by total counts of all invasive species according to data from the Global Invasive Species Database (GIRD).

For more details on the variable construction, see the original source:

Molnar, J. L., Gamboa, R. L., Revenga C., Spalding, M. (2008). Assessing the global threat of invasive species to marine biodiversity. *Frontiers in Ecology and the Environment* 6(485).

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.28 Percent direct employment in tourism (ohi\_tjpt)

*Long tag:* qog\_ei\_ohi\_tjpt

*Original tag:* ohi\_tjpt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Percent direct employment in tourism. For more details on the variable construction, see the original source:

World Travel and Tourism Council, WTTC  
(<http://www.wttc.org/research/economic-data-search-tool/>)

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.29 CBD Survey: Tourism (ohi\_tour)

*Long tag:* qog\_ei\_ohi\_tour

*Original tag:* ohi\_tour

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD Survey: Tourism. A resilience measure based on questions 79, 80, and 82 from The Convention on Biological Diversity country questionnaire (Third National Report to the CBD, from 2005).

Question 79: Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?

- a) No;
- b) No, but mechanisms are under development;
- c) Yes, mechanisms are in place (please specify below);
- d) Yes, existing mechanisms are under review.

Question 80: Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts?

- a) No;
- b) No, but programmes are under development;
- c) Yes, programmes are in place (please describe below).

Question 82: Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management?

- a) No;
- b) No, but relevant programmes are being considered;
- c) Yes, some programmes are in place;
- d) Yes, comprehensive programmes are in place.

For more details on the variable construction, see the original sources:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>)

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.30 Sustainability index (ohi\_trstust)

*Long tag:* qog\_ei\_ohi\_trstust

*Original tag:* ohi\_trstust

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

Sustainability index. For more details on the variable construction, see the original source:

World Economic Forum (<http://www.weforum.org/issues/global-competitiveness>)

When using this variable, please cite both the OHI project and the original source.

### 3.1.29.31 CBD Survey: Water (ohi\_water)

*Long tag:* qog\_ei\_ohi\_water

*Original tag:* ohi\_water

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Halpern et al. (2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 148, Percent: 1.2

*Non-missing observations in chosen unit:* Sum: 128, Percent: 0.43

*Lost observations in chosen unit:* Sum: 20 Percent: 13.51

*Description:*

CBD Survey: water. A resilience measure based on question 153(d,f) from The Convention on Biological Diversity country questionnaire (Third National Report to the CBD, from 2005).

Question 153(d,f): Do your country's strategies and action plans include the following:  
 d) Instituting improved integrated marine and coastal area management (including catchments management) in order to reduce sediment and nutrient loads into the marine environment;  
 f) Improving sewage and other waste treatment?

For more details on the variable construction, see the original source:

Convention on Biological Diversity, CBD (<http://www.cbd.int/reports/search/default.shtml>)

When using this variable, please cite both the OHI project and the original source.

### 3.1.30 Oil and Gas Data, 1932-2014

Dataset by: Michael L Ross Global dataset of oil and natural gas production, prices, exports, and net exports. These data are based on the best available information about the volume and value of oil and natural gas production in all countries from 1932 to 2014. The volume figures are from the documents listed in the original source; to calculate the total value of production, the author multiplies the volume by the world price for oil or gas. Since these are world prices for a single (benchmark) type of oil/gas, they only approximate the actual price - which varies by country according to the quality, the terms of contracts, the timing of the transactions, and other factors. These figures do not tell how much revenues were collected by governments or companies - only the approximate volume and value of production. Data on oil production from 1946 to 1969, and gas production from 1955 (when it first was reported) to 1969, are from the US Geological Survey Minerals Yearbook, for various years. Link to the original source: <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/ZTPW0Y>

#### 3.1.30.1 Gas exports, billion cubic feet per year (ross\_gas\_exp)

*Long tag:* qog\_ei\_ross\_gas\_exp

*Original tag:* ross\_gas\_exp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4006, Percent: 32.42

*Non-missing observations in chosen unit:* Sum: 3860, Percent: 12.96

*Lost observations in chosen unit:* Sum: 146 Percent: 3.64

*Description:*

Gas exports, billion cubic feet per year.

### **3.1.30.2 Net gas exports value, constant 2000 dollars (ross\_gas\_netexp)**

*Long tag:* qog\_ei\_ross\_gas\_netexp

*Original tag:* ross\_gas\_netexp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3871, Percent: 31.32

*Non-missing observations in chosen unit:* Sum: 3731, Percent: 12.52

*Lost observations in chosen unit:* Sum: 140 Percent: 3.62

*Description:*

Net gas exports value, measured in constant 2000 US dollars to adjust for inflation.

### **3.1.30.3 Net gas exports value per capita, constant 2000 dollars (ross\_gas\_netexpc)**

*Long tag:* qog\_ei\_ross\_gas\_netexpc

*Original tag:* ross\_gas\_netexpc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 3870, Percent: 31.32

*Non-missing observations in chosen unit:* Sum: 3730, Percent: 12.52

*Lost observations in chosen unit:* Sum: 140 Percent: 3.62

*Description:*

Net gas exports value per capita, measured in constant 2000 dollars

### **3.1.30.4 Constant price of gas in 2000 dollar/mboe (ross\_gas\_price)**

*Long tag:* qog\_ei\_ross\_gas\_price

*Original tag:* ross\_gas\_price

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9579, Percent: 77.51

*Non-missing observations in chosen unit:* Sum: 8999, Percent: 30.2

*Lost observations in chosen unit:* Sum: 580 Percent: 6.05

*Description:*

Constant price of gas in 2000 dollar/mboe.

### **3.1.30.5 Gas production, million barrels oil equiv. (ross\_gas\_prod)**

*Long tag:* qog\_ei\_ross\_gas\_prod

*Original tag:* ross\_gas\_prod

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8352, Percent: 67.58

*Non-missing observations in chosen unit:* Sum: 7904, Percent: 26.53

*Lost observations in chosen unit:* Sum: 448 Percent: 5.36

*Description:*

Gas production measured in million barrels of oil equivalent.

### **3.1.30.6 Gas production value in 2000 dollars (ross\_gas\_value\_2000)**

*Long tag:* qog\_ei\_ross\_gas\_value\_2000

*Original tag:* ross\_gas\_value\_2000

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8352, Percent: 67.58

*Non-missing observations in chosen unit:* Sum: 7904, Percent: 26.53

*Lost observations in chosen unit:* Sum: 448 Percent: 5.36

*Description:*

Gas production value in 2000 dollars.

### **3.1.30.7 Gas production value in 2014 dollars (ross\_gas\_value\_2014)**

*Long tag:* qog\_ei\_ross\_gas\_value\_2014

*Original tag:* ross\_gas\_value\_2014

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8352, Percent: 67.58

*Non-missing observations in chosen unit:* Sum: 7904, Percent: 26.53

*Lost observations in chosen unit:* Sum: 448 Percent: 5.36

*Description:*

Gas production value in constant 2014 US dollars to adjust for inflation.

### **3.1.30.8 Oil exports, thousands of barrels per day (ross\_oil\_exp)**

*Long tag:* qog\_ei\_ross\_oil\_exp

*Original tag:* ross\_oil\_exp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4497, Percent: 36.39

*Non-missing observations in chosen unit:* Sum: 4333, Percent: 14.54

*Lost observations in chosen unit:* Sum: 164 Percent: 3.65

*Description:*

Oil exports, thousands of barrels per day.

### **3.1.30.9 Net oil exports value, constant 2000 dollars (ross\_oil\_netexp)**

*Long tag:* qog\_ei\_ross\_oil\_netexp

*Original tag:* ross\_oil\_netexp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4497, Percent: 36.39

*Non-missing observations in chosen unit:* Sum: 4333, Percent: 14.54

*Lost observations in chosen unit:* Sum: 164 Percent: 3.65

*Description:*

Net oil exports value measured in constant 2000 US dollars to adjust for inflation.

### **3.1.30.10 Net oil exports value per capita, constant 2000 dollars (ross\_oil\_netexpc)**

*Long tag:* qog\_ei\_ross\_oil\_netexpc

*Original tag:* ross\_oil\_netexpc

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4496, Percent: 36.38

*Non-missing observations in chosen unit:* Sum: 4332, Percent: 14.54

*Lost observations in chosen unit:* Sum: 164 Percent: 3.65

*Description:*

Net oil exports value per capita measured in constant 2000 dollars.

### **3.1.30.11 Constant price of oil in 2000 dollar/brl (ross\_oil\_price)**

*Long tag:* qog\_ei\_ross\_oil\_price

*Original tag:* ross\_oil\_price

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9579, Percent: 77.51

*Non-missing observations in chosen unit:* Sum: 8999, Percent: 30.2

*Lost observations in chosen unit:* Sum: 580 Percent: 6.05

*Description:*

Constant price of oil in 2000 dollar/brl.

### **3.1.30.12 Oil production in metric tons (ross\_oil\_prod)**

*Long tag:* qog\_ei\_ross\_oil\_prod

*Original tag:* ross\_oil\_prod

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8837, Percent: 71.51

*Non-missing observations in chosen unit:* Sum: 8363, Percent: 28.07

*Lost observations in chosen unit:* Sum: 474 Percent: 5.36

*Description:*

Oil production in metric tons.

### **3.1.30.13 Oil production value in 2000 dollars (ross\_oil\_value\_2000)**

*Long tag:* qog\_ei\_ross\_oil\_value\_2000

*Original tag:* ross\_oil\_value\_2000

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8837, Percent: 71.51

*Non-missing observations in chosen unit:* Sum: 8363, Percent: 28.07

*Lost observations in chosen unit:* Sum: 474 Percent: 5.36

*Description:*

Oil production value in 2000 dollars.

**3.1.30.14 Oil production value in 2014 dollars (ross\_oil\_value\_2014)**

*Long tag:* qog\_ei\_ross\_oil\_value\_2014

*Original tag:* ross\_oil\_value\_2014

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Ross & Mahdavi (2015)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8837, Percent: 71.51

*Non-missing observations in chosen unit:* Sum: 8363, Percent: 28.07

*Lost observations in chosen unit:* Sum: 474 Percent: 5.36

*Description:*

Oil production value in constant 2014 US dollars to adjust for inflation.

**3.1.31 Sustainable Governance Indicators**

Dataset by: Bertelsmann Stiftung The Sustainable Governance Indicators (SGI) is a platform built on a cross-national survey of governance that identifies reform needs in 41 EU and OECD countries. SGI explores how governments target sustainable development and advocate for more sustainable governance built on three pillars: 1) Policy Performance; 2) Democracy; and 3) Governance. Link to the original source: <https://www.sgi-network.org/2020/>

**3.1.31.1 Environmental Policy Performance Index (sgi\_en)**

*Long tag:* qog\_ei\_sgi\_en

*Original tag:* sgi\_en

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 246, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The index consists of two parts: Environment Index and Global Environmental Protection Index, weighted equally. The variable varies between 0 and 10.

**3.1.31.2 Environmental Policy Performance - Environment (sgi\_enen)**

*Long tag:* qog\_ei\_sgi\_enen

*Original tag:* sgi\_enen

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 246, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The Environment index consists of the "Environmental Policy" indicator (50percent), based on expert assessments of environmental policy effectiveness, and nine indicators related to observable environmental performance, including Energy Productivity (5,56percent), Greenhouse Gas Emissions (5,56percent), Particulate Matter (5,56percent), Biocapacity (5,56percent), Waste Generation (5,56percent), Material Recycling (5,56percent), Biodiversity (5,56percent), Renewable Energy (5,56percent), and Material footprint (5,56percent). The index varies from 0 to 10.

### 3.1.31.3 Environmental Policy Performance - Global Environmental Protection (sgi\_enge)

*Long tag:* qog\_ei\_sgi\_enge

*Original tag:* sgi\_enge

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 246, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The Global Environmental Protection index consists of "Global Environmental Policy Indicator" (50percent), based on expert assessments of countries' participation in global environmental protection regimes, the rate of participation in Multilateral Environmental Agreements (25percent), and Kyoto Participation and Achievements indicator, measuring to what extent the Kyoto emission reduction targets were met (25percent). The index varies from 0 to 10.

### 3.1.31.4 Environmental policy effectiveness (sgi\_epe)

*Long tag:* qog\_ei\_sgi\_epe

*Original tag:* sgi\_epe

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 246, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The indicator measures how effectively a national environmental policy protects and preserves the sustainability of natural resources and the quality of the environment.

Effective environmental policies will help promote and incentivize goal-driven technological progress and environmentally friendly behavior and ensure sufficient resources are allocated for implementation. In assessing the effectiveness of environmental policies, the experts were invited to draw on the following guiding questions:

1. Are environmental policy goals ambitious (i.e., do they target more than improvements to efficiency)?
2. Are environmental policies implemented with tangible impact?
3. Are environmental concerns integrated effectively across relevant policy sectors (i.e., energy, housing, transport, manufacturing industry, research and innovation, tourism, fisheries, agriculture)?

As environmental performance may be issue-specific, the experts were invited to provide a short paragraph for each of the four key targets of protection: resource use (land, water, materials, energy), environmental pollution (water, air, soil), climate and biodiversity protection.

The indicator is based on expert answers to these questions and varies from 0 to 10, where 0-1 is "Environmental concerns have been largely abandoned" and 9-10 is "Environmental policy goals are ambitious and effectively implemented as well as monitored within and across most relevant policy sectors that account for the largest share of resource use and emissions".



### 3.1.31.5 Participation in global environmental regimes (sgi\_ger)

*Long tag:* qog\_ei\_sgi\_ger

*Original tag:* sgi\_ger

*Dataset citation:* Povitkina et al. (2021)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 246, Percent: 0.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The indicator measures the extent to which governments actively contribute to the design and advancement of global environmental protection regimes.

Protecting the climate and preserving natural resources worldwide depends on effective collective action carried out on a global level. Examples of active contribution include demonstrating initiative and responsibility, acting as an agenda-setter within international frameworks, and/or achieving an alignment of purpose among conflicting interests in international negotiations.

The experts were invited to provide a paragraph addressing the following three aspects:

1. Which issues are treated as global common goods rather than domestic environmental problems (e.g., chemical pollution, biodiversity conservation, forest protection, climate protection, etc.)?
2. Which of these global issues or goals does the government address, and has it formulated and implemented action plans targeting these goals?
3. Are countries targeting the preservation of global common goods by contributing funds either through international facilities or official development assistance?

The indicator is based on the expert answers to these questions and varies from 0 to 10, where 1-2 is "The government does not contribute to international efforts to strengthen global environmental protection regimes," and 9-10 is "The government actively contributes to international efforts to design and advance global environmental protection regimes. In most cases, it demonstrates commitment to existing regimes, contributes to their being advanced and has introduced appropriate reforms."

### 3.1.32 Stock of Climate Laws and Policies

Dataset by: Eskander and Fankhauser Data on the stock of climate change mitigation laws and policies used in the paper: Eskander, S.M. and Fankhauser, S., 2020. Reduction in greenhouse gas emissions from national climate legislation. *Nature Climate Change*, 10(8), pp.750-756. Mitigation laws and policies refer to a legislative or executive disposition focused on curbing a country's greenhouse gases emissions in one sector or more. Measures can be directly related to emissions reductions, such as laws establishing a national carbon budget or cap and trade system, or indirectly related, such as laws or policies establishing relevant institutions or providing additional funding for research and development into low carbon technologies. Laws and policies addressing forests and land use are included as long as they explicitly support climate change mitigation through activities that reduce emissions and increase carbon removals. General forest management and conservation laws are not included, even if they may have implicit consequences for climate change mitigation. Link to the original source: <https://github.com/smsu1979/Eskander-Fankhauser-NCC-2020->

#### 3.1.32.1 Stock of executive orders/policies on mitigation for the past 3 years (slaws\_mit\_ex\_13)

*Long tag:* qog\_ei\_slaws\_mit\_ex\_13

*Original tag:* slaws\_mit\_ex\_l3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Number of policies addressing climate mitigation that were enacted by the national executive branch for the previous 3 years, rolling. These include presidential decrees, executive orders, or department regulations.

### **3.1.32.2 Stock of older executive orders/policies on mitigation (slaws\_mit\_ex\_lt)**

*Long tag:* qog\_ei\_slaws\_mit\_ex\_lt

*Original tag:* slaws\_mit\_ex\_lt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Number of policies addressing climate mitigation that were enacted by the national executive branch until three years back, rolling. These policies include presidential decrees, executive orders, or department regulations.

### **3.1.32.3 Stock of mitigation laws and policies for the past 3 years (slaws\_mit\_l3)**

*Long tag:* qog\_ei\_slaws\_mit\_l3

*Original tag:* slaws\_mit\_l3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Number of laws and policies addressing climate mitigation that were adopted by the national government in the previous 3 years, rolling.

### **3.1.32.4 Stock of legislative mitigation laws for the past 3 years (slaws\_mit\_leg\_l3)**

*Long tag:* qog\_ei\_slaws\_mit\_leg\_l3

*Original tag:* slaws\_mit\_leg\_l3

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Number of laws addressing climate mitigation that were passed by the national legislature in

the previous three years, rolling. Laws are passed by the parliament, congress, or equivalent legislative authority.

### 3.1.32.5 Stock of older legislative mitigation laws (slaws\_mit\_leg\_lt)

*Long tag:* qog\_ei\_slaws\_mit\_leg\_lt

*Original tag:* slaws\_mit\_leg\_lt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Total number of laws addressing climate mitigation that were passed by the national legislature until three years back, rolling. Laws are passed by the parliament, congress, or equivalent legislative authority.

### 3.1.32.6 Stock of older mitigation laws and policies (slaws\_mit\_lt)

*Long tag:* qog\_ei\_slaws\_mit\_lt

*Original tag:* slaws\_mit\_lt

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Eskander & Fankhauser (2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2527, Percent: 20.45

*Non-missing observations in chosen unit:* Sum: 2432, Percent: 8.16

*Lost observations in chosen unit:* Sum: 95 Percent: 3.76

*Description:*

Total number of laws and policies addressing climate mitigation that were adopted by the national government until three years back, rolling.

### 3.1.33 V-Party Dataset

Dataset by: Varieties of Democracy (V-Dem) Project V-Party provides expert-coded assessments of party organization and identity for most parties in most countries over 1970-2019. Using V-Dem methodology (Coppedge et al., 2020), in January 2020, 665 experts rated the policy positions and organizational capacity of political parties across elections in a given country. Specifically, as a general rule, experts coded data for all parties that reached more than 5Link to the original source: <https://www.v-dem.net/en/data/data/v-party-dataset/>

#### 3.1.33.1 Environmental parties: share of seats (vparty\_envseat)

*Long tag:* qog\_ei\_vparty\_envseat

*Original tag:* vparty\_envseat

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Lindberg et al. (2022), (n.d.)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 198, Percent: 1.6

*Non-missing observations in chosen unit:* Sum: 187, Percent: 0.63

*Lost observations in chosen unit:* Sum: 11 Percent: 5.56

*Description:*

The variable measures the share of seats in the lower chamber taken by the parties, for which environmental protection is relevant to gain and keep voters, as agreed on by at least half of

the coders in the V-Party dataset.

The original variable from V-Party dataset - v2pasalie - measures the share of coders who answered "Environmental protection" to the multiple-choice question "Which of the following issues are most relevant for the party's effort to gain and keep voters?". We only keep parties that score 0.5 or higher on variable v2pasalie\_12 and then calculate their share of seats in a given country-year using v2paseatshare variable - Seat share the party gained in the election to the lower chamber.

### 3.1.33.2 Environmental parties: share of votes (vparty\_envvote)

*Long tag:* qog\_ei\_vparty\_envvote

*Original tag:* vparty\_envvote

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* Lindberg et al. (2022), (n.d.)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 198, Percent: 1.6

*Non-missing observations in chosen unit:* Sum: 187, Percent: 0.63

*Lost observations in chosen unit:* Sum: 11 Percent: 5.56

*Description:*

The variable measures the share of votes to the lower chamber received by the parties, for which environmental protection is relevant to gain and keep voters, as agreed on by at least half of the coders in the V-Party dataset.

The original variable from V-Party dataset - v2pasalie - reports the share of coders who answered "Environmental protection" to the multiple-choice question "Which of the following issues are most relevant for the party's effort to gain and keep voters?". We only keep parties that score 0.5 or higher on variable v2pasalie\_12 and then calculate their share of votes in a given country-year using v2pavote variable - Vote share the party gained in the election to the lower chamber.

### 3.1.34 World Development Indicators

*Dataset by:* The World Bank Group The primary World Bank collection of development indicators, compiled from officially-recognized international sources. This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank. Link to the original source: <http://data.worldbank.org/data-catalog/world-developmentindicators>

#### 3.1.34.1 Agricultural irrigated land (percent of total agricultural land) (wdi\_agrland)

*Long tag:* qog\_ei\_wdi\_agrland

*Original tag:* wdi\_agrland

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 826, Percent: 6.68

*Non-missing observations in chosen unit:* Sum: 799, Percent: 2.68

*Lost observations in chosen unit:* Sum: 27 Percent: 3.27

*Description:*

Agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land

abandoned as a result of shifting cultivation is excluded. Land under permanent crops is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. This category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. Permanent pasture is land used for five or more years for forage, including natural and cultivated crops.

#### **3.1.34.2 Arable land (percent of land area) (wdi\_araland)**

*Long tag:* qog\_ei\_wdi\_araland

*Original tag:* wdi\_araland

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8900, Percent: 72.02

*Non-missing observations in chosen unit:* Sum: 8050, Percent: 27.02

*Lost observations in chosen unit:* Sum: 850 Percent: 9.55

*Description:*

Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded.

#### **3.1.34.3 Land area (sq. km) (wdi\_area)**

*Long tag:* qog\_ei\_wdi\_area

*Original tag:* wdi\_area

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9457, Percent: 76.53

*Non-missing observations in chosen unit:* Sum: 8419, Percent: 28.26

*Lost observations in chosen unit:* Sum: 1038 Percent: 10.98

*Description:*

Land area is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes.

#### **3.1.34.4 Land area where elevation is below 5 meters (percent of total land area) (wdi\_areabelow)**

*Long tag:* qog\_ei\_wdi\_areabelow

*Original tag:* wdi\_areabelow

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 464, Percent: 3.75

*Non-missing observations in chosen unit:* Sum: 402, Percent: 1.35

*Lost observations in chosen unit:* Sum: 62 Percent: 13.36

*Description:*

Land area below 5m is the percentage of total land where the elevation is 5 meters or less.

#### **3.1.34.5 CO2 emissions (metric tons per capita) (wdi\_co2)**

*Long tag:* qog\_ei\_wdi\_co2

*Original tag:* wdi\_co2

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9010, Percent: 72.91

*Non-missing observations in chosen unit:* Sum: 8161, Percent: 27.39

*Lost observations in chosen unit:* Sum: 849 Percent: 9.42

*Description:*

Carbon dioxide (CO<sub>2</sub>) emissions stem from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

### **3.1.34.6 Forest area (percent of land area) (wdi\_forest)**

*Long tag:* qog\_ei\_wdi\_forest

*Original tag:* wdi\_forest

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5009, Percent: 40.53

*Non-missing observations in chosen unit:* Sum: 4422, Percent: 14.84

*Lost observations in chosen unit:* Sum: 587 Percent: 11.72

*Description:*

Forest area is land under natural or planted stands of trees of at least 5 meters in situ, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens.

### **3.1.34.7 Fossil fuel energy consumption (percent of total) (wdi\_fossil)**

*Long tag:* qog\_ei\_wdi\_fossil

*Original tag:* wdi\_fossil

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5629, Percent: 45.55

*Non-missing observations in chosen unit:* Sum: 5428, Percent: 18.22

*Lost observations in chosen unit:* Sum: 201 Percent: 3.57

*Description:*

Fossil fuel energy consumption as a percentage of total energy consumption. Fossil fuel comprises coal, oil, petroleum, and natural gas products.

### **3.1.34.8 Internally displaced persons, new displacement-disasters (number) (wdi\_idpdis)**

*Long tag:* qog\_ei\_wdi\_idpdis

*Original tag:* wdi\_idpdis

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1171, Percent: 9.48

*Non-missing observations in chosen unit:* Sum: 1101, Percent: 3.7

*Lost observations in chosen unit:* Sum: 70 Percent: 5.98

*Description:*

Internally displaced persons, new displacement associated with disasters (number of people). Internally displaced persons are defined according to the 1998 Guiding Principles (<http://www.internal-displacement.org/publications/1998/ocha-guiding-principles-on-internal-displacement>) as people or groups of people who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of armed conflict, or to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or human-made disasters and who have not crossed an international border. “New Displacement” refers to the number of new cases or incidents of displacement recorded, rather than the number of people displaced. This is done because people may have been displaced more than once.

### 3.1.34.9 Policy and institutions for environmental sustainability (wdi\_piesr)

*Long tag:* qog\_ei\_wdi\_piesr

*Original tag:* wdi\_piesr

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1132, Percent: 9.16

*Non-missing observations in chosen unit:* Sum: 964, Percent: 3.24

*Lost observations in chosen unit:* Sum: 168 Percent: 14.84

*Description:*

Policy and institutions for environmental sustainability measures the extent to which environmental policies foster the protection and sustainable use of natural resources and the management of pollution. The indicator ranges from 1 (low) to 6 (high).

### 3.1.34.10 Average precipitation in depth (mm per year) (wdi\_precip)

*Long tag:* qog\_ei\_wdi\_precip

*Original tag:* wdi\_precip

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1902, Percent: 15.39

*Non-missing observations in chosen unit:* Sum: 1753, Percent: 5.88

*Lost observations in chosen unit:* Sum: 149 Percent: 7.83

*Description:*

Average precipitation is the long-term average in depth (over space and time) of annual precipitation in the country in millimeters (mm). Precipitation is defined as any kind of water that falls from clouds as a liquid or a solid.

### 3.1.34.11 Terrestrial protected areas (percent of total land area) (wdi\_tpa)

*Long tag:* qog\_ei\_wdi\_tpa

*Original tag:* wdi\_tpa

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 571, Percent: 4.62

*Non-missing observations in chosen unit:* Sum: 508, Percent: 1.71

*Lost observations in chosen unit:* Sum: 63 Percent: 11.03

*Description:*

Terrestrial protected areas are totally or partially protected areas of at least 1,000 hectares that are designated by national authorities as scientific reserves with limited public access, national

parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes, and areas managed mainly for sustainable use. Marine areas, unclassified areas, littoral (intertidal) areas, and sites protected under local or provincial law are excluded. World Database on Protected Areas (WDPA) where the compilation and management is carried out by United Nations Environment World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with governments, non-governmental organizations, academia, and industry. The data are available online through the Protected Planet website (<https://www.protectedplanet.net/>).

### 3.1.35 World Values Survey

Dataset by: World Values Survey The World Values Survey is a global network of social scientists studying changing values and their impact on social and political life, led by an international team of scholars, with the WVS association and secretariat headquartered in Stockholm, Sweden. The European Values Study started in 1981 when a thousand citizens in the European Member States of that time were interviewed using standardized questionnaires. Every nine years, the survey is repeated in a variable number of countries. The fourth wave in 2008 covers no less than 47 European countries/regions, from Iceland to Georgia and from Portugal to Norway. EVS is cooperating with WVS for the data collection in Europe and both datasets can be integrated. The variables are country averages calculated using the population weight provided by WVS/EVS. Link to the original source: <http://www.worldvaluessurvey.org/>

#### 3.1.35.1 Active memberships in environmental organizations (percent) (wvs\_ameop)

*Long tag:* qog\_ei\_wvs\_ameop

*Original tag:* wvs\_ameop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 217, Percent: 1.76

*Non-missing observations in chosen unit:* Sum: 211, Percent: 0.71

*Lost observations in chosen unit:* Sum: 6 Percent: 2.76

*Description:*

Percent of respondents mentioning they are active members in an environmental organization in the question: "Now I am going to read out a list of voluntary organizations; for each one, could you tell me whether you are a member, an active member, an inactive member, or not a member of that type of organization?". A higher score means that more people are active members of environmental organizations. A lower score means that fewer people are active members of environmental organizations.

#### 3.1.35.2 Confidence in environmental organizations (mean) (wvs\_ceom)

*Long tag:* qog\_ei\_wvs\_ceom

*Original tag:* wvs\_ceom

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 245, Percent: 1.98

*Non-missing observations in chosen unit:* Sum: 239, Percent: 0.8

*Lost observations in chosen unit:* Sum: 6 Percent: 2.45

*Description:*

Average reply to the question: "I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence, or none at all? - Environmental organizations"



- 1) A great deal;
- 2) Quite a lot;
- 3) Not very much;
- 4) None at all.

Answers "Don't know" and "No answer" are deleted. The higher the score, the lower the confidence in environmental organizations.

### 3.1.35.3 Donations to ecological organizations (percent) (wvs\_deop)

*Long tag:* qog\_ei\_wvs\_deop

*Original tag:* wvs\_deop

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 58, Percent: 0.47

*Non-missing observations in chosen unit:* Sum: 57, Percent: 0.19

*Lost observations in chosen unit:* Sum: 1 Percent: 1.72

*Description:*

Percent of "yes"-replies to the question: "During the past two years, have you given money to an ecological organization?". A higher score means that more people have donated money to environmental organizations. A lower score means that fewer people have donated money to environmental organizations.

### 3.1.35.4 Protecting environment vs economic growth (percent) (wvs\_epmip)

*Long tag:* qog\_ei\_wvs\_epmip

*Original tag:* wvs\_epmip

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 246, Percent: 1.99

*Non-missing observations in chosen unit:* Sum: 240, Percent: 0.81

*Lost observations in chosen unit:* Sum: 6 Percent: 2.44

*Description:*

Percent of replies mentioning "Protecting the environment should be given priority" to the question: "Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?"

A. Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs

B. Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent

A higher score means that more people prioritize the environment over economic growth and jobs. A lower score means that more people prioritize economic growth and jobs over the environment.

### 3.1.35.5 Environment is the most serious problem (percent) (wvs\_epmpp)

*Long tag:* qog\_ei\_wvs\_epmpp

*Original tag:* wvs\_epmpp

*Dataset citation:* Povitkina et al. (2021)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:**Non-missing observations in original unit:* Sum: 104, Percent: 0.84*Non-missing observations in chosen unit:* Sum: 102, Percent: 0.34*Lost observations in chosen unit:* Sum: 2 Percent: 1.92*Description:*

Percent of replies mentioning “Environmental pollution” to the question: “I’m going to read out some problems. Please indicate which of the following problems you consider the most serious one for the world as a whole?”. A higher score means that more people prioritize the environment over other serious world problems. A lower score means that fewer people prioritize the environment over other serious world problems.

**3.1.35.6 Inactive memberships in environmental organizations (percent) (wvs\_imeop)***Long tag:* qog\_ei\_wvs\_imeop*Original tag:* wvs\_imeop*Dataset citation:* Povitkina et al. (2021)*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)*Merge scores:**Non-missing observations in original unit:* Sum: 216, Percent: 1.75*Non-missing observations in chosen unit:* Sum: 210, Percent: 0.7*Lost observations in chosen unit:* Sum: 6 Percent: 2.78*Description:*

Percent of respondents mentioning they are inactive members in an environmental organization in the question: “Now I am going to read out a list of voluntary organizations; for each one, could you tell me whether you are a member, an active member, an inactive member, or not a member of that type of organization?”. A higher score means that there are more inactive members in environmental organizations among the general population. A lower score implies that there are fewer inactive members in environmental organizations among the general population.

**3.1.35.7 Participation in environmental protests (percent) (wvs\_pedp)***Long tag:* qog\_ei\_wvs\_pedp*Original tag:* wvs\_pedp*Dataset citation:* Povitkina et al. (2021)*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)*Merge scores:**Non-missing observations in original unit:* Sum: 58, Percent: 0.47*Non-missing observations in chosen unit:* Sum: 57, Percent: 0.19*Lost observations in chosen unit:* Sum: 1 Percent: 1.72*Description:*

Percent of “yes”-replies to the question: “During the past two years, have you participated in a demonstration for some environmental cause?”. A higher score means that there are more people who have participated in environmental protests. A lower score means that there are fewer people who have participated in environmental protests.

**3.1.35.8 Important to look after the environment (mean) (wvs\_ploem)***Long tag:* qog\_ei\_wvs\_ploem*Original tag:* wvs\_ploem*Dataset citation:* Povitkina et al. (2021)*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)*Merge scores:*

*Non-missing observations in original unit:* Sum: 110, Percent: 0.89

*Non-missing observations in chosen unit:* Sum: 107, Percent: 0.36

*Lost observations in chosen unit:* Sum: 3 Percent: 2.73

*Description:*

Average reply to the question: "Now I will briefly describe some people. Using this card, would you please indicate for each description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you? - Looking after the environment is important to this person; to care for nature and save life resources";

- 1) Very much like me;
- 2) Like me;
- 3) Somewhat like me;
- 4) A little like me;
- 5) Not like me;
- 6) Not at all like me.

Answers "Don't know" and "No answer" are deleted. A higher score means that fewer people believe that it is important to look after the environment. A lower score means that more people believe that it is important to look after the environment.

## 3.2 QoG EU Regional Dataset Long Data

**Dataset tag:** qog\_eureg\_long

**Output Unit:** QoG NUTS Region-Year, i.e., data is collected per European NUTS region and year.

**Description:** The QoG EU Regional dataset is a dataset consisting of more than 300 variables covering three levels of European regions - Nomenclature of Territorial Units for Statistics (NUTS): NUTS0 (country), NUTS1 (major socio-economic regions) and NUTS2 (basic regions for the application of regional policies).

The QoG Regional Data is presented in three different forms available in separate datasets. The variables are the same across all three datasets besides a varying suffix (`_nuts0`, `_nuts1`, `_nuts2`) indicating which NUTS level is represented.

All datasets are available in time-series format. The first one (The QoG Regional Data - Long Form) is a dataset where data is presented in the long form. The list of units of analysis contains regions of all NUTS levels.

Two other datasets are presented in the wide form for multilevel analysis. In the second dataset (The QoG Regional Data - Wide Form NUTS1) includes NUTS1 level as the unit of analysis and variables represent the values for this level and corresponding lower level – NUTS0. As an example, in this dataset the data is presented only for East Sweden (Ostra Sverige SE1), as a unit of analysis and has values for lower levels of this region - Sweden (SE).

In the third dataset (The QoG Regional Data - Wide Form NUTS2) the unit of analysis is NUTS2 level regions and variables provide values as for every unit of analysis, as well as for corresponding lower NUTS levels: NUTS1 and NUTS0. One example of unit of analysis in this dataset is Stockholm (SE11) and data for every variable will be for Stockholm, as well as for lower level regions - East Sweden (Ostra Sverige SE1) and Sweden (SE).

**Dataset citation:** Charron, Nicholas, Stefan Dahlberg, Aksel Sundström, Sören Holmberg, Bo Rothstein, Natalia Alvarado Pachon, Cem Mert Dalli. 2020. The Quality of Government EU Regional Dataset, version Nov20. University of Gothenburg: The Quality of Government Institute, <https://www.gu.se/en/quality-government> doi:10.18157/qogeuregnov20

**Link to original codebook**

[https://www.qogdata.pol.gu.se/data/codebook\\_eureg\\_nov20.pdf](https://www.qogdata.pol.gu.se/data/codebook_eureg_nov20.pdf)

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Be mindful that the original data sources are the only owners of their data and they can adjust their license without previous warning.

More detailed information on the dataset can be found at the following web page: <https://www.gu.se/en/quality-government/qog-data/data-downloads/eu-regional-dataset>

### 3.2.1 Environment

This category includes indicators related to temperature and municipal waste.

#### 3.2.1.1 Municipal waste disposal - incineration in thousand tonnes (eu\_env\_wasdsp\_i)

*Long tag:* qog\_eureg\_long\_eu\_env\_wasdsp\_i

*Original tag:* eu\_env\_wasdsp\_i

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 277, Percent: 0.93

*Description:*

Municipal waste disposal, incineration in thousand tonnes. Municipal waste is mainly produced by households, similar wastes from sources such as commerce, offices and public institutions are included. The amount of municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling. Data are available in thousand tonnes and kilograms per person. Wastes from agriculture and from industries are not included.

#### 3.2.1.2 Municipal waste generated in thousand tonnes (eu\_env\_wasgen)

*Long tag:* qog\_eureg\_long\_eu\_env\_wasgen

*Original tag:* eu\_env\_wasgen

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 327, Percent: 1.1

*Description:*

Municipal waste generated in thousand tonnes. Municipal waste is mainly produced by households, similar wastes from sources such as commerce, offices and public institutions are included. The amount of municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling. Data are available in thousand tonnes and kilograms per person. Wastes from agriculture and from industries

are not included.

### 3.2.1.3 Municipal waste recovery - energy recovery in thousand tonnes (eu\_env\_wasrcv\_e)

*Long tag:* qog\_eureg\_long\_eu\_env\_wasrcv\_e

*Original tag:* eu\_env\_wasrcv\_e

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 276, Percent: 0.93

*Description:*

Municipal waste energy recovery in thousand tonnes. Energy recovery is defined as the incineration that fulfils the energy efficiency criteria laid down in the Waste Framework Directive (2008/98/EC), Annex II (recovery operation R1). Municipal waste is mainly produced by households, similar wastes from sources such as commerce, offices and public institutions are included. The amount of municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling. Data are available in thousand tonnes and kilograms per person. Wastes from agriculture and from industries are not included.

### 3.2.1.4 Municipal waste recycling in thousand tonnes (eu\_env\_wasrcy\_c\_d)

*Long tag:* qog\_eureg\_long\_eu\_env\_wasrcy\_c\_d

*Original tag:* eu\_env\_wasrcy\_c\_d

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 289, Percent: 0.97

*Description:*

Municipal waste recycling in thousand tonnes. Recycling means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations. Municipal waste is mainly produced by households, similar wastes from sources such as commerce, offices and public institutions are included. The amount of municipal waste generated consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling. Data are available in thousand tonnes and kilograms per person. Wastes from agriculture and from industries are not included.

### 3.2.1.5 Number of cooling degree days (eu\_eng\_cdd)

*Long tag:* qog\_eureg\_long\_eu\_eng\_cdd

*Original tag:* eu\_eng\_cdd

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 1073, Percent: 3.6

*Description:*

Number of cooling degree days (CDD). Cooling degree day (CDD) index is a weather-based technical index designed to describe the need for the cooling (air-conditioning) requirements of buildings. CDD is derived from meteorological observations of air temperature, interpolated to regular grids at 25 km resolution for Europe. Calculated gridded CDD is aggregated and subsequently presented on NUTS-2 level, for 2017 and 2018 also on NUTS-3 level.

**3.2.1.6 Number of heating degree days (eu\_eng\_hdd)**

*Long tag:* qog\_eureg\_long\_eu\_eng\_hdd

*Original tag:* eu\_eng\_hdd

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 1073, Percent: 3.6

*Description:*

Number of heating degree days (HDD). Heating degree day (HDD) index is a weather-based technical index designed to describe the need for the heating energy requirements of buildings. HDD is derived from meteorological observations of air temperature, interpolated to regular grids at 25 km resolution for Europe. Calculated gridded HDD is aggregated and subsequently presented on NUTS-2 level, for 2017 and 2018 also on NUTS-3 level.

**3.2.2 Science and Technology**

This category provides information on employment rates in different sectors, for the total population as well as subgroups.

**3.2.2.1 Employment in agriculture, fishing and mining, percent of tot. employment, male (eu\_emtk\_ab\_m)**

*Long tag:* qog\_eureg\_long\_eu\_emtk\_ab\_m

*Original tag:* eu\_emtk\_ab\_m

*Dataset citation:* Charron et al. (2020)

*Variable citation:* European Commission (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 0, Percent: 0

*Non-missing observations in chosen unit:* Sum: 365, Percent: 1.23

*Description:*

Male employment in agriculture, forestry and fishing; mining and quarrying, as percentage of total male employment. Data come from EU Labour force survey (LFS). Employed people are defined as persons aged 15 years and over who during the reference week performed work, even for just one hour a week, for pay, profit or family gain or were not at work but had a job or business from which they were temporarily absent because of, e.g., illness, holidays, industrial dispute and education and training. In high-tech statistics the population excludes anyone below the age of 15 or over the age of 74. The data are aggregated based on the statistical classification of economic activities in the European Community (NACE) at 2-digit level.

**3.3 QoG Standard Dataset Time-Series**

**Dataset tag:** qog\_std\_ts

**Output Unit:** QoG Country-Year, i.e., data is collected per country and year.

**Description:** The QoG Standard dataset is our largest dataset. It consists of approximately 2100 variables from more than 100 data sources related to Quality of Government. In the QoG Standard

TS dataset, data from 1946 to 2023 is included and the unit of analysis is country-year (e.g., Sweden-1946, Sweden-1947, etc.).

**Dataset citation:** Teorell, Jan, Aksel Sundström, Sören Holmberg, Bo Rothstein, Natalia Alvarado Pachon, Cem Mert Dalli, Rafael Lopez Valverde Paula Nilsson. 2024. The Quality of Government Standard Dataset, version Jan24. University of Gothenburg: The Quality of Government Institute, <https://www.gu.se/en/quality-government> doi:10.18157/qogstdjan24

**Link to original codebook**

[https://www.qogdata.pol.gu.se/data/codebook\\_std\\_jan24.pdf](https://www.qogdata.pol.gu.se/data/codebook_std_jan24.pdf)

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More detailed information on the dataset can be found at the following web page: <https://www.gu.se/en/quality-government/qog-data/data-downloads/standard-dataset>

### 3.3.1 Environment

This category includes geographical characteristics such as the geographical region, land area etc. as well as indicators describing the state of the environment, ecosystems and materials, the impact of human beings on the environment, and environmental protection.

#### 3.3.1.1 Built-up land footprint of consumption (gha per person) (ef\_bul)

*Long tag:* qog\_std\_ts\_ef\_bul

*Original tag:* ef\_bul

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023), Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85

*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

The built-up land footprint is calculated based on the area of land covered by human infrastructure: transportation, housing, and industrial structures. Built-up land may occupy what would previously have been cropland. Measured in global hectares (gha) per person.

#### 3.3.1.2 Carbon footprint of consumption (gha per person) (ef\_carb)

*Long tag:* qog\_std\_ts\_ef\_carb

*Original tag:* ef\_carb

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023), Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85

*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

The carbon footprint measures CO<sub>2</sub> emissions associated with fossil fuel use (burning fossil fuels and the embodied carbon in imported goods). The carbon footprint component is represented by the area of biologically productive land necessary for absorbing these carbon emissions. Currently, the carbon footprint is the largest portion of humanity's footprint. It is expressed in global hectares (gha) per person.

### 3.3.1.3 Cropland footprint of consumption (gha per person) (ef\_crop)

*Long tag:* qog\_std\_ts\_ef\_crop

*Original tag:* ef\_crop

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023),  
Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85

*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

Cropland is the most bioproductive of all the land-use types and consists of areas used to produce food and fibre for human consumption, feed for livestock, oil crops, and rubber. The cropland footprint includes crop products allocated to livestock and aquaculture feed mixes, and those used for fibres and materials. Due to lack of globally consistent data sets, current cropland footprint calculations do not yet take into account the extent to which farming techniques or unsustainable agricultural practices may cause long-term degradation of soil.

### 3.3.1.4 Ecological footprint of consumption per person (gha per person) (ef\_ef)

*Long tag:* qog\_std\_ts\_ef\_ef

*Original tag:* ef\_ef

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023),  
Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8852, Percent: 71.63

*Non-missing observations in chosen unit:* Sum: 8172, Percent: 27.43

*Lost observations in chosen unit:* Sum: 680 Percent: 7.68

*Description:*

Total ecological footprint of consumption divided by the population size. Measured in global hectares (gha) per person.

### 3.3.1.5 Fish footprint of consumption (gha per person) (ef\_fg)

*Long tag:* qog\_std\_ts\_ef\_fg

*Original tag:* ef\_fg

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023),  
Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85



*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

The fishing grounds footprint is calculated based on estimates of the maximum sustainable catch for a variety of fish species. These sustainable catch estimates are converted into an equivalent mass of primary production based on the various species' trophic levels. This estimate of maximum harvestable primary production is then divided amongst the continental shelf areas of the world. Fish caught and used in aquaculture feed mixes are included. Measured in global hectares (gha) per person.

### 3.3.1.6 Forest product footprint of consumption (gha per person) (ef\_for)

*Long tag:* qog\_std\_ts\_ef\_for

*Original tag:* ef\_for

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023),  
Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85

*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

The forest product footprint is calculated based on the amount of lumber, pulp, timber products, and fuel wood consumed by a population on a yearly basis. Measured in global hectares (gha) per person.

### 3.3.1.7 Grazing footprint of consumption (gha per person) (ef\_gl)

*Long tag:* qog\_std\_ts\_ef\_gl

*Original tag:* ef\_gl

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* York University Ecological Footprint Initiative Global Footprint Network (2023),  
Global Footprint Network (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 7025, Percent: 56.85

*Non-missing observations in chosen unit:* Sum: 6637, Percent: 22.28

*Lost observations in chosen unit:* Sum: 388 Percent: 5.52

*Description:*

Grazing land is used to raise livestock for meat, dairy, hide, and wool products. The grazing land footprint is calculated by comparing the amount of livestock feed available in a country with the amount of feed required for all livestock in that year, with the remainder of feed demand assumed to come from grazing land. Measured in global hectares (gha) per person.

### 3.3.1.8 Agriculture Issue Category (epi\_agr)

*Long tag:* qog\_std\_ts\_epi\_agr

*Original tag:* epi\_agr

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Agriculture Issue Category consists of the Sustainable Nitrogen Management Index, which measures the Euclidean distance from an ideal point with optimal nitrogen use efficiency (NUE) and crop yield. The issue category varies from 0 to 100.

### 3.3.1.9 Biodiversity and Habitat Issue Category (epi\_bdh)

*Long tag:* qog\_std\_ts\_epi\_bdh

*Original tag:* epi\_bdh

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Biodiversity and Habitat Issue Category consists of 7 indicators:

1) The terrestrial biome protection (national weights) indicator. It is calculated by first taking proportions of the area of each of a country's biome types that are covered by protected areas and then constructing a weighted sum of the protection percentages for all biomes within that country. The protection percentages are weighted according to the prevalence of each biome type within that country. This indicator evaluates a country's efforts to achieve 17percent protection for all biomes within its borders, as per Aichi Target 11. It is given 20percent weight in the aggregation.

2) The terrestrial biome protection (global weights) indicator, where protection percentages are weighted according to the global prevalence of each biome type. This indicator evaluates a country's contribution toward the global 17percent protection goal. It is given 20percent weight in the aggregation.

3) The marine protected areas indicator, measured as a percentage of a country's total exclusive economic zone (EEZ) designated as marine protected areas (MPAs). Because each country may have multiple EEZs, the summed area of MPAs is divided by the summed EEZ. It is given 20percent weight in the aggregation.

4) The Protected Areas Representativeness Index (PARI), which measures ecological representativeness as the proportion of biologically scaled environmental diversity included in a country's terrestrial protected areas. The measure relies on remote sensing, biodiversity informatics, and global modeling of fine-scaled variation in biodiversity composition for plant, vertebrate, and invertebrate species. It is given 10percent weight in the aggregation.

5) Species Habitat Index (SHI) estimates potential population losses, as well as regional and global extinction risks of individual species, using habitat loss as a proxy. The SHI indicator measures the proportion of suitable habitat within a country that remains intact for each species in that country relative to a baseline set in the year 2001. It is given 10percent weight in the aggregation.

6) Species Protection Index (SPI) evaluates the species-level ecological representativeness of each country's protected area network. The SPI metric uses remote sensing data, global biodiversity informatics, and integrative models to map suitable habitat for over 30,000 terrestrial vertebrate, invertebrate, and plant species at high resolutions. It is given 10percent

weight in the aggregation.

7) The Biodiversity Habitat Index (BHI), which estimates the effects of habitat loss, degradation, and fragmentation on the expected retention of terrestrial biodiversity. It is given 10percent weight in the aggregation.

The issue category varies from 0 to 100.

### 3.3.1.10 Climate Change Issue Category (epi\_cch)

*Long tag:* qog\_std\_ts\_epi\_cch

*Original tag:* epi\_cch

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Climate Change Issue Category consists of 8 indicators:

1) The CO<sub>2</sub> growth rate, calculated as the average annual rate of increase or decrease in raw carbon dioxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 55percent weight in the aggregation.

2) The CH<sub>4</sub> growth rate, calculated as the average annual rate of increase or decrease in raw methane emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 15percent weight in the aggregation.

3) The F-gas growth rate, calculated as the average annual rate of increase or decrease in raw fluorinated gas emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 10percent weight in the aggregation.

4) The N<sub>2</sub>O growth rate, calculated as the average annual rate of increase or decrease in raw nitrous oxide emissions over the years 2008-2017. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 5percent weight in the aggregation.

5) The black carbon growth rate, calculated as the average annual rate of increase or decrease in black carbon over the years 2005-2014. It is then adjusted for economic trends to isolate change due to policy rather than economic fluctuation. It is given 5percent weight in the aggregation.

6) Greenhouse gas (GHG) emissions per capita in the year 2017. First, the EPI team calculates total greenhouse gas emissions, applying Global Warming Potentials to convert all units to Gg of CO<sub>2</sub>-equivalents. Second, they calculate GHG emissions per capita (GHP) as

the GHG emissions divided by population (POP). It is log-transformed and given 2.5percent weight in the aggregation.

7) CO2 emissions from land cover change, calculated over the years 2001-2015. First, the EPI team regresses logged CO2 emissions from land cover change (LULC) over 15 years to find a slope. Then, they calculate an unadjusted average annual growth rate in these CO2 emissions. It is given 2.5percent weight in the aggregation.

8) The greenhouse gas (GHG) intensity growth rate indicator, which serves as a signal of countries' progress in decoupling emissions from economic growth. The EPI team calculates an annual average growth rate in GHG emissions per unit of GDP over the years 2008-2017. This indicator highlights the need for action on climate change mitigation in countries at all income levels. It is given 5percent weight in the aggregation.

The issue category varies from 0 to 100.

#### **3.3.1.11 Ecosystem Services Issue Category (epi\_ecs)**

*Long tag:* qog\_std\_ts\_epi\_ecs

*Original tag:* epi\_ecs

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 166, Percent: 1.34

*Non-missing observations in chosen unit:* Sum: 156, Percent: 0.52

*Lost observations in chosen unit:* Sum: 10 Percent: 6.02

*Description:*

Ecosystem Services Issue Category consists of 3 indicators:

1) Tree cover loss, measured as a five-year moving average of the percentage of forest lost from the extent of forest cover in the reference year 2000. They define a forest as any land area with over 30percent canopy cover. It is log-transformed,  $\ln(x + 1)$ ,  $= 9.70E-07$ , and given 90percent weight in the aggregation.

2) Grassland loss, measured as a five-year moving average of percentage of gross losses in grassland areas compared to the 1992 reference year. It is log-transformed,  $\ln(x + 1)$ ,  $= 4.45E-06$ , and given 5percent weight in the aggregation.

3) Wetland loss, measured as a five-year moving average of percentage of gross losses in wetland areas compared to the 1992 reference year. It is log-transformed,  $\ln(x + 1)$ ,  $= 2.47E-06$ , and given 5percent weight in the aggregation.

The issue category varies from 0 to 100.

#### **3.3.1.12 Environmental Health Policy Objective (epi\_eh)**

*Long tag:* qog\_std\_ts\_epi\_eh

*Original tag:* epi\_eh

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Environmental Health Policy Objective measures how well countries are protecting their populations from environmental health risks. It comprises 40percent of the total EPI score and consists of 4 issue categories: Air Quality (50percent), Sanitation and Drinking Water (40percent), Heavy Metals (5percent), and Waste Management (5percent). The policy objective varies from 0 to 100.

### 3.3.1.13 Environmental Performance Index (epi\_epi)

*Long tag:* qog\_std\_ts\_epi\_epi

*Original tag:* epi\_epi

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

The 2020 Environmental Performance Index (EPI) scores 180 countries on 32 performance indicators across 11 issue categories related to environmental health and ecosystem vitality. The 2020 EPI is a composite index. The EPI researchers begin by gathering data on 32 individual metrics of environmental performance. These metrics are aggregated into a hierarchy beginning with 11 issue categories: Air Quality, Sanitation and Drinking Water, Heavy Metals, Waste Management, Biodiversity and Habitat, Ecosystem Services, Fisheries, Climate Change, Pollution Emissions, Water Resources, and Agriculture.

These issue categories are then combined into 2 policy objectives, Environmental Health and Ecosystem Vitality, and then finally consolidated into the overall EPI. To allow for meaningful comparisons, before aggregation the EPI researchers construct scores for each of the 32 indicators, placing them onto a common scale where 0 indicates worst performance and 100 indicates best performance. How far a country is from achieving international targets of sustainability determines its placement on this scale.

Note: The EPI scores are not comparable over time, therefore, this dataset only includes the EPI scores from the latest release.

### 3.3.1.14 Ecosystem Vitality Policy Objective (epi\_ev)

*Long tag:* qog\_std\_ts\_epi\_ev

*Original tag:* epi\_ev

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Ecosystem Vitality Policy Objective measures how well countries are preserving, protecting, and enhancing ecosystems and the services they provide. It comprises 60percent of the total

EPI score and consists of 7 issue categories: Biodiversity and Habitat (25percent), Ecosystem Services (10percent), Fisheries (10percent), Climate Change (40percent), Pollution Emissions (5percent), Agriculture (5percent), and Water Resources (5percent). The policy objective varies from 0 to 100.

### 3.3.1.15 Fisheries Issue Category (epi\_fsh)

*Long tag:* qog\_std\_ts\_epi\_fsh

*Original tag:* epi\_fsh

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 136, Percent: 1.1

*Non-missing observations in chosen unit:* Sum: 122, Percent: 0.41

*Lost observations in chosen unit:* Sum: 14 Percent: 10.29

*Description:*

Fisheries Issue Category consists of 3 indicators:

1) Fish stock status, measured as the percentage of a country's total catch that comes from overexploited or collapsed stocks, considering all fish stocks within a country's EEZs. Because continued and increased stock exploitation leads to smaller catches, this indicator sheds light on the impact of a country's fishing practices. The metric is calculated as an average percentage weighted by catch and summed across classes of concern. It is log-transformed,  $\ln(x + 1)$ , = 1.13E-05, and given 35percent weight in the aggregation.

2) Marine Trophic Index (MTI), which measures the health of a country's fishing stock based on expected catch and changes over time. The MTI describes the degree to which a country is depleting species at higher trophic levels and "fishing down the food web." It is log-transformed,  $\ln(x + 1)$ , = 9.51E-07, and given 35percent weight in the aggregation.

3) Fish caught by trawling, measured as the percentage of a country's fish caught by bottom or pelagic trawling, where a fishing net is pulled through the water behind a boat. It is log-transformed,  $\ln(x + 1)$ , = 8.40E-08, and given 30percent weight in the aggregation.

The issue category varies from 0 to 100.

### 3.3.1.16 Sanitation and Drinking Water Issue Category (epi\_h2o)

*Long tag:* qog\_std\_ts\_epi\_h2o

*Original tag:* epi\_h2o

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Sanitation and Drinking Water Issue Category consists of two indicators:

1) Unsafe sanitation, measured as the proportion of a country's population exposed to health risks from their access to sanitation, defined by the primary toilet type used by households.

It is log-transformed and given 40percent weight in the aggregation.

2) Unsafe drinking water, measured as the proportion of a country's population exposed to health risks from their access to drinking water, defined by the primary water source used by households and the household water treatment, or the treatment that happens at the point of water collection. It is log-transformed and given 60percent weight in the aggregation.

Both indicators are measured using the number of age-standardized disability-adjusted life-years (DALYs) lost per 100,000 persons. The issue category varies from 0 to 100.

### 3.3.1.17 Heavy Metals Issue Category (epi\_hmt)

*Long tag:* qog\_std\_ts\_epi\_hmt

*Original tag:* epi\_hmt

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Heavy Metals Issue Category consists of the indicator Lead Exposure, which measures the number of age-standardized disability-adjusted life-years (DALYs) lost per 100,000 persons due to this risk. It is log-transformed. The issue category varies from 0 to 100.

### 3.3.1.18 Waste Management Issue Category (epi\_wmg)

*Long tag:* qog\_std\_ts\_epi\_wmg

*Original tag:* epi\_wmg

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 180, Percent: 1.46

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 15 Percent: 8.33

*Description:*

Waste Management Issue Category consists of the indicator Controlled Solid Waste, which refers to the proportion of household and commercial waste generated in a country that is collected and treated in a manner that controls environmental risks. This metric counts waste as "controlled" if it is treated through recycling, composting, anaerobic digestion, incineration, or disposed of in a sanitary landfill. The issue category varies from 0 to 100.

### 3.3.1.19 Water Resources Issue Category (epi\_wrs)

*Long tag:* qog\_std\_ts\_epi\_wrs

*Original tag:* epi\_wrs

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Wolf et al. (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 177, Percent: 1.43

*Non-missing observations in chosen unit:* Sum: 165, Percent: 0.55

*Lost observations in chosen unit:* Sum: 12 Percent: 6.78

*Description:*

Water Resources Issue Category consists of the indicator Wastewater Treatment, which measures the percentage of wastewater that undergoes at least primary treatment, normalized by the proportion of the population connected to a municipal wastewater collection system. It is calculated through a straightforward product of wastewater treatment level and sewerage connection rate. The issue category varies from 0 to 100.

**3.3.1.20 Agricultural land (percent of Land area) (fao\_luagr)**

*Long tag:* qog\_std\_ts\_fao\_luagr

*Original tag:* fao\_luagr

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10061, Percent: 81.41

*Non-missing observations in chosen unit:* Sum: 8819, Percent: 29.6

*Lost observations in chosen unit:* Sum: 1242 Percent: 12.34

*Description:*

Agricultural land as a share of total land area.

**3.3.1.21 Arable land (percent of Agricultural land) (fao\_luagrara)**

*Long tag:* qog\_std\_ts\_fao\_luagrara

*Original tag:* fao\_luagrara

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9966, Percent: 80.64

*Non-missing observations in chosen unit:* Sum: 8819, Percent: 29.6

*Lost observations in chosen unit:* Sum: 1147 Percent: 11.51

*Description:*

Arable land as a share of total agricultural land.

**3.3.1.22 Cropland (percent of Agricultural land) (fao\_luagrcrop)**

*Long tag:* qog\_std\_ts\_fao\_luagrcrop

*Original tag:* fao\_luagrcrop

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10061, Percent: 81.41

*Non-missing observations in chosen unit:* Sum: 8819, Percent: 29.6

*Lost observations in chosen unit:* Sum: 1242 Percent: 12.34

*Description:*

Cropland as a share of total agricultural land.

**3.3.1.23 Agriculture area actually irrigated (percent of Agricultural land) (fao\_luagrirrac)**

*Long tag:* qog\_std\_ts\_fao\_luagrirrac

*Original tag:* fao\_luagrirrac

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*



*Non-missing observations in original unit:* Sum: 970, Percent: 7.85

*Non-missing observations in chosen unit:* Sum: 952, Percent: 3.2

*Lost observations in chosen unit:* Sum: 18 Percent: 1.86

*Description:*

Agriculture area actually irrigated as a share of total agricultural land.

#### **3.3.1.24 Land area equipped for irrigation (percent of Cropland) (fao\_luagrirreqcrop)**

*Long tag:* qog\_std\_ts\_fao\_luagrirreqcrop

*Original tag:* fao\_luagrirreqcrop

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 8921, Percent: 72.19

*Non-missing observations in chosen unit:* Sum: 8268, Percent: 27.75

*Lost observations in chosen unit:* Sum: 653 Percent: 7.32

*Description:*

Land area equipped for irrigation as a share of total cropland.

#### **3.3.1.25 Agriculture area under organic agric. (percent of Agricultural land) (fao\_luagrorg)**

*Long tag:* qog\_std\_ts\_fao\_luagrorg

*Original tag:* fao\_luagrorg

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2303, Percent: 18.64

*Non-missing observations in chosen unit:* Sum: 2168, Percent: 7.28

*Lost observations in chosen unit:* Sum: 135 Percent: 5.86

*Description:*

Agriculture area under organic agriculture as a share of total agricultural land.

#### **3.3.1.26 Cropland (percent of Land area) (fao\_lucrop)**

*Long tag:* qog\_std\_ts\_fao\_lucrop

*Original tag:* fao\_lucrop

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 10061, Percent: 81.41

*Non-missing observations in chosen unit:* Sum: 8819, Percent: 29.6

*Lost observations in chosen unit:* Sum: 1242 Percent: 12.34

*Description:*

Cropland as a share of total land area.

#### **3.3.1.27 Forest land (percent of Land area) (fao\_luforest)**

*Long tag:* qog\_std\_ts\_fao\_luforest

*Original tag:* fao\_luforest

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5832, Percent: 47.19

*Non-missing observations in chosen unit:* Sum: 5116, Percent: 17.17

*Lost observations in chosen unit:* Sum: 716 Percent: 12.28

*Description:*

Forest land as a share of total land area.

**3.3.1.28 Planted forest (percent of Forest area) (fao\_luforplant)**

*Long tag:* qog\_std\_ts\_fao\_luforplant

*Original tag:* fao\_luforplant

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5561, Percent: 45

*Non-missing observations in chosen unit:* Sum: 4995, Percent: 16.77

*Lost observations in chosen unit:* Sum: 566 Percent: 10.18

*Description:*

Planted forest as a share of total forest area.

**3.3.1.29 Other naturally regenerated forest (percent of Forest area) (fao\_luforreg)**

*Long tag:* qog\_std\_ts\_fao\_luforreg

*Original tag:* fao\_luforreg

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* FAO (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5561, Percent: 45

*Non-missing observations in chosen unit:* Sum: 4995, Percent: 16.77

*Lost observations in chosen unit:* Sum: 566 Percent: 10.18

*Description:*

Other naturally regenerated forest as a share of total forest area.

**3.3.1.30 Natural Resource Protection Indicator (nrmi\_nrpi)**

*Long tag:* qog\_std\_ts\_nrmi\_nrpi

*Original tag:* nrmi\_nrpi

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Center for International Earth Science Information Network - CIESIN - Columbia University (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 4999, Percent: 40.45

*Non-missing observations in chosen unit:* Sum: 4358, Percent: 14.63

*Lost observations in chosen unit:* Sum: 641 Percent: 12.82

*Description:*

Natural Resource Protection Indicator assesses whether a country is protecting at least 17percent of all of its biomes (e.g. deserts, forests, grasslands, aquatic, and tundra). It is designed to capture the comprehensiveness of a government's commitment to habitat preservation and biodiversity protection. The World Wildlife Fund provides the underlying biome data, and the United Nations Environment Program World Conservation Monitoring Center provides the underlying data on protected areas.

**3.3.1.31 CO2 emissions from fuel combustion (oecd\_airqty\_t1)**

*Long tag:* qog\_std\_ts\_oecd\_airqty\_t1

*Original tag:* oecd\_airqty\_t1

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 2157, Percent: 17.45

*Non-missing observations in chosen unit:* Sum: 2157, Percent: 7.24

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

CO2 emissions from fuel combustion in million tonnes

### **3.3.1.32 Greenhouse gas emissions (oecd\_greenhouse\_t1)**

*Long tag:* qog\_std\_ts\_oecd\_greenhouse\_t1

*Original tag:* oecd\_greenhouse\_t1

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1033, Percent: 8.36

*Non-missing observations in chosen unit:* Sum: 1033, Percent: 3.47

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Greenhouse gas emissions in thousand tonnes CO2 equivalent

### **3.3.1.33 Sulphur Oxides Emissions (oecd\_soxnox\_t1a)**

*Long tag:* qog\_std\_ts\_oecd\_soxnox\_t1a

*Original tag:* oecd\_soxnox\_t1a

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 924, Percent: 7.48

*Non-missing observations in chosen unit:* Sum: 924, Percent: 3.1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Sulphur Oxides Emmissions in thousand tonnes

### **3.3.1.34 Nitrogene Oxides Emissions (oecd\_soxnox\_t1b)**

*Long tag:* qog\_std\_ts\_oecd\_soxnox\_t1b

*Original tag:* oecd\_soxnox\_t1b

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 924, Percent: 7.48

*Non-missing observations in chosen unit:* Sum: 924, Percent: 3.1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Nitrogene Oxides Emmissions in thousand tonnes

### **3.3.1.35 Total amount of municipal waste generated (oecd\_waste\_t1b)**

*Long tag:* qog\_std\_ts\_oecd\_waste\_t1b

*Original tag:* oecd\_waste\_t1b

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 964, Percent: 7.8

*Non-missing observations in chosen unit:* Sum: 964, Percent: 3.24

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Total amount generated of municipal waste in thousand tonnes

### 3.3.1.36 The Ocean Health Index (ohi\_ohi)

*Long tag:* qog\_std\_ts\_ohi\_ohi

*Original tag:* ohi\_ohi

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Halpern et al. (2012, 2018), Ocean Health Index (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1650, Percent: 13.35

*Non-missing observations in chosen unit:* Sum: 1441, Percent: 4.84

*Lost observations in chosen unit:* Sum: 209 Percent: 12.67

*Description:*

The Ocean Health Index establishes reference points for achieving ten widely accepted socio-ecological objectives and scores the oceans adjacent to 171 countries and territories on how successfully they deliver these goals. Evaluated globally and by country, these ten public goals represent the wide range of benefits that a healthy ocean can provide; each country's overall score is the average of its respective goal scores. The ten socio-ecological objectives are: Food Provision, Artisanal Fishing Opportunities, Natural Products, Carbon Storage, Coastal Protection, Coastal Livelihoods  
 amp; Economies, Tourism  
 amp; Recreation, Sense of Place, Clean Waters, Biodiversity. The index varies from 0 to 100.

### 3.3.1.37 Environmental Policy Performance Index (sgi\_en)

*Long tag:* qog\_std\_ts\_sgi\_en

*Original tag:* sgi\_en

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Schiller & Hellmann (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 328, Percent: 2.65

*Non-missing observations in chosen unit:* Sum: 328, Percent: 1.1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The index consists of two parts: Environment Index and Global Environmental Protection Index, weighted equally. The variable varies between 0 and 10.

### 3.3.1.38 Environmental Policy Performance - Environment (sgi\_enen)

*Long tag:* qog\_std\_ts\_sgi\_enen

*Original tag:* sgi\_enen

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Schiller & Hellmann (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 328, Percent: 2.65

*Non-missing observations in chosen unit:* Sum: 328, Percent: 1.1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The Environment index consists of the "Environmental Policy" indicator (50percent), based on expert assessments of environmental policy effectiveness, and nine indicators related to observable environmental performance, including Energy Productivity (5,56percent), Greenhouse Gas Emissions (5,56percent), Particulate Matter (5,56percent), Biocapacity (5,56percent), Waste Generation (5,56percent), Material Recycling (5,56percent), Biodiversity (5,56percent), Renewable Energy (5,56percent), and Material footprint (5,56percent). The index varies from 0 to 10.

### 3.3.1.39 Environmental Policy Performance - Global Environmental Protection (sgi\_enge)

*Long tag:* qog\_std\_ts\_sgi\_enge

*Original tag:* sgi\_enge

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Schiller & Hellmann (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 328, Percent: 2.65

*Non-missing observations in chosen unit:* Sum: 328, Percent: 1.1

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

The Global Environmental Protection index consists of "Global Environmental Policy Indicator" (50percent), based on expert assessments of countries' participation in global environmental protection regimes, the rate of participation in Multilateral Environmental Agreements (25percent), and Kyoto Participation and Achievements indicator, measuring to what extent the Kyoto emission reduction targets were met (25percent). The index varies from 0 to 10.

### 3.3.1.40 Agricultural irrigated land (percent of total agricultural land) (wdi\_agrland)

*Long tag:* qog\_std\_ts\_wdi\_agrland

*Original tag:* wdi\_agrland

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 970, Percent: 7.85

*Non-missing observations in chosen unit:* Sum: 952, Percent: 3.2

*Lost observations in chosen unit:* Sum: 18 Percent: 1.86

*Description:*

Agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. Land under permanent crops is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. This category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. Permanent pasture is land used for five or more years for forage, including natural and cultivated crops.

### 3.3.1.41 Arable land (percent of land area) (wdi\_araland)

*Long tag:* qog\_std\_ts\_wdi\_araland

*Original tag:* wdi\_araland

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9792, Percent: 79.24

*Non-missing observations in chosen unit:* Sum: 8811, Percent: 29.57

*Lost observations in chosen unit:* Sum: 981 Percent: 10.02

*Description:*

Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded.

#### **3.3.1.42 CO2 emissions (metric tons per capita) (wdi\_co2)**

*Long tag:* qog\_std\_ts\_wdi\_co2

*Original tag:* wdi\_co2

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5606, Percent: 45.36

*Non-missing observations in chosen unit:* Sum: 4963, Percent: 16.66

*Lost observations in chosen unit:* Sum: 643 Percent: 11.47

*Description:*

Carbon dioxide (CO<sub>2</sub>) emissions stem from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

#### **3.3.1.43 Forest area (percent of land area) (wdi\_forest)**

*Long tag:* qog\_std\_ts\_wdi\_forest

*Original tag:* wdi\_forest

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 5852, Percent: 47.35

*Non-missing observations in chosen unit:* Sum: 5124, Percent: 17.2

*Lost observations in chosen unit:* Sum: 728 Percent: 12.44

*Description:*

Forest area is land under natural or planted stands of trees of at least 5 meters in situ, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens.

#### **3.3.1.44 Policy and institutions for environmental sustainability (wdi\_piesr)**

*Long tag:* qog\_std\_ts\_wdi\_piesr

*Original tag:* wdi\_piesr

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1275, Percent: 10.32

*Non-missing observations in chosen unit:* Sum: 1083, Percent: 3.63

*Lost observations in chosen unit:* Sum: 192 Percent: 15.06

*Description:*

Policy and institutions for environmental sustainability measures the extent to which environmental policies foster the protection and sustainable use of natural resources and the management of pollution. The indicator ranges from 1 (low) to 6 (high).

**3.3.1.45 Average precipitation in depth (mm per year) (wdi\_precip)**

*Long tag:* qog\_std\_ts\_wdi\_precip

*Original tag:* wdi\_precip

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* World Bank (2022)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 9170, Percent: 74.2

*Non-missing observations in chosen unit:* Sum: 8610, Percent: 28.9

*Lost observations in chosen unit:* Sum: 560 Percent: 6.11

*Description:*

Average precipitation is the long-term average in depth (over space and time) of annual precipitation in the country in millimeters (mm). Precipitation is defined as any kind of water that falls from clouds as a liquid or a solid.

**3.3.1.46 Confidence: The Environmental Protection Movement (mean) (wvs\_confenv)**

*Long tag:* qog\_std\_ts\_wvs\_confenv

*Original tag:* wvs\_confenv

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 330, Percent: 2.67

*Non-missing observations in chosen unit:* Sum: 324, Percent: 1.09

*Lost observations in chosen unit:* Sum: 6 Percent: 1.82

*Description:*

The mean average reply to the question below:

I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: The Environmental Protection Movement

1. None at all
2. Not very much
3. Quite a lot
4. A great deal

**3.3.1.47 Government should reduce environmental pollution (wvs\_envgov)**

*Long tag:* qog\_std\_ts\_wvs\_envgov

*Original tag:* wvs\_envgov

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Description:*

Government should reduce environmental pollution

**3.3.1.48 Would give part of my income for the environment (wvs\_envinc)**

*Long tag:* qog\_std\_ts\_wvs\_envinc

*Original tag:* wvs\_envinc

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Description:*

Would give part of my income for the environment

**3.3.1.49 Increase in taxes if used to prevent environmental pollution (wvs\_envtax)**

*Long tag:* qog\_std\_ts\_wvs\_envtax

*Original tag:* wvs\_envtax

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* EVS (2021, 2020), Haerpfer et al. (2021, 2020)

*Description:*

Increase in taxes if used to prevent environmental pollution

**3.3.2 Public Economy**

This category includes economic indicators that reflect the involvement of the government in the economy (taxes, tariff rates and government expenditures), economic key figures of a state (GDP, inflation, and economic inequality), and indicators that characterize the state of the economy (aid-flows, debt).

**3.3.2.1 Real value added: agriculture, fishing, hunting and forestry (oecd\_evova\_t1a)**

*Long tag:* qog\_std\_ts\_oecd\_evova\_t1a

*Original tag:* oecd\_evova\_t1a

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 1110, Percent: 8.98

*Non-missing observations in chosen unit:* Sum: 1110, Percent: 3.73

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Real value added in agriculture, fishing, hunting and forestry, annual growth in percentage

**3.3.2.2 Re-exported intermediates: Agriculture, hunting, forest \ and fish (oecd\_tiva\_inter\_t1a)**

*Long tag:* qog\_std\_ts\_oecd\_tiva\_inter\_t1a

*Original tag:* oecd\_tiva\_inter\_t1a

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* Organisation for Economic Co-operation and Development (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 308, Percent: 2.49

*Non-missing observations in chosen unit:* Sum: 308, Percent: 1.03

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

Re-exported intermediates: share of agriculture, hunting, forestry and fishing



### 3.3.3 Energy and Infrastructure

This category includes indicators that cover descriptions of different energy sources (production, consumption and trade) and variables related to quality and quantity of different sectors of infrastructure (transportation and communication).

#### 3.3.3.1 Marine: Renewable Electricity Generation (GWh) (pg\_regma)

*Long tag:* qog\_std\_ts\_pg\_regma

*Original tag:* pg\_regma

*Dataset citation:* Teorell et al. (2024)

*Variable citation:* International Renewable Energy Agency (2024)

*Description:*

Electricity generation from marine energy sources. It includes power derived from ocean energy forms such as tidal, wave, and ocean thermal energy conversion (OTEC), measured in Gigawatt-hours (GWh).

## 4 V-DEM

Based at the University of Gothenburg, the **Varieties of Democracy (V-Dem)** Research Project takes a comprehensive approach to understanding democratization. This approach encompasses multiple core principles: electoral, liberal, majoritarian, consensual, participatory, deliberative, and egalitarian. Each Principle is represented by a separate index, and each is regarded as a separate outcome in the proposed study. In this manner V-Dem reconceptualizes democracy from a single outcome to a set of outcomes. In addition, V-Dem breaks down each core principle into its constituent components, each to be measured separately. Components include features such as free and fair elections, civil liberties, judicial independence, executive constraints, gender equality, media freedom, and civil society. Finally, each component is disaggregated into specific indicators. This fundamentally different approach to democratization is made possible by the V-Dem Database, which measures 450+ indicators annually from 1789 to the present for all countries of the world. The V-Dem approach stands out, first, as a large global collaboration among scholars with diverse areas of expertise; second, as the first project attempting to explain different varieties of democracy; and third, thanks to the highly disaggregated V-Dem data, the first project to explore causal mechanisms linking different aspects of democracy together. With five Principal Investigators, 19 Project Managers with special responsibility for issue areas covered in the V-Dem dataset, around 23 Regional Managers, 134 Country Coordinators and more than 4000 Country Experts, the V-Dem project is one of the world's largest social science data collection projects on democracy. More information is available on the project's website: <https://www.v-dem.net/>

### 4.1 V-Dem Country-Year: V-Dem Full+Others v14

**Dataset tag:** `vdem_cy`

**Output Unit:** V-Dem Country-Year, i.e., data is collected per country and year.

**Description:** All 500 V-Dem indicators and 245 indices + 57 other indicators from other data sources. For R users, we recommend to install our `vdemdata` R package which includes the most recent V-Dem dataset and some useful functions to explore the data.

**Dataset citation:** Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Fabio Angiolillo, Michael Bernhard, Cecilia Borella, Agnes Cornell, M. Steven Fish, Linnea Fox, Lisa Gastaldi, Haakon Gjerløw, Adam Glynn, Ana Good God, Sandra Grahn, Allen Hicken, Katrin Kinzelbach, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Anja Neundorff, Pamela Paxton, Daniel Pemstein, Oskar Rydén, Johannes von Römer, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Aksel Sundström, Eitan Tzelgov, Luca Uberti, Yi-ting Wang, Tore Wig, and Daniel Ziblatt. 2024. "V-Dem Codebook v14" Varieties of Democracy (V-Dem) Project.

**Link to original codebook**

[https://v-dem.net/documents/38/v-dem\\_codebook\\_v14.pdf](https://v-dem.net/documents/38/v-dem_codebook_v14.pdf)

**License:** CC-BY-SA 4.0 International

<https://creativecommons.org/licenses/by-sa/4.0/legalcode>

More detailed information on the dataset can be found at the following web page: <https://www.v-dem.net/vdemds.html>

#### 4.1.1 V-Dem Indicators - The Executive

##### Instructions to the coders (as shown in the surveys)

##### **Executive:**

In this section, we distinguish between the head of state (HOS) and the head of government (HOG). The *head of state* is an individual or collective body that serves as the chief public representative of the country. Sometimes this is a largely ceremonial role, *e.g.* a monarch who reigns but does not rule,

or a president whose powers are strictly circumscribed. The *head of government* is the chief officer(s) of the executive branch of government, typically presiding over a cabinet. In a parliamentary system, this is usually the prime minister. In a presidential system, this is usually the president, who then serves as both, head of state and head of government. In a typical semi-presidential system, the president serves as head of state and the prime minister serves as head of government.

These definitions are grounded in the *functions* that each office performs, as described above. Titles can be confusing. Do not assume, for example, that simply because an individual holds the title of "president" s/he is serving as the chief public representative of the country. Likewise, it may be that the *effective* head of state/head of government is someone other than the *official* head of state/head of government. In this instance, the following questions apply to the person who effectively wields this power. In some socialist systems, for example, the official head of state was a person within the state bureaucracy, but in practice the chief public representative of the country was the chairman of the communist party. It is the latter who is the "effective" head of state, and hence should be the focus of your answers. The same applies if the head of state/head of government is so old, sick or perhaps mentally disabled that s/he cannot perform his/her functions, which are instead performed by someone else. It is the latter person who is the effective head of state/head of government.

If you are considering a semi sovereign territory, such as a colony, an annexed territory or a member of the British Commonwealth, please answer the following questions with respect to the head of state and (if separate) the head of government who is located in the territory in question. Thus, in a typical British colony the governor-general—not the King/Queen of England—would be understood as the head of state. Likewise, in a British colony the local prime minister in the colony—not the prime minister in London—would be understood as the head of government.

In order to mitigate potential misunderstandings, the identities of the head of state and head of government for each country have been pre-coded for as many years as possible. Thus, when conducting your coding make sure to pay close attention to the names of these individuals, which you can see by clicking on the year grid for a particular year in the first question of this section, "HOS name." This is your key to what we mean by "head of state" or "head of government."

Note also that when the two functions are fused in the same office, we ask you to code only the head of state section of the survey. Any precoded years contain an orange triangle. This means that either the score or text and/or specific date have already been entered, so we are asking you only to add your confidence in the precoded rating; we do not want you to change the rating, as we need all the Country Experts to answer the subsequent questions for the same executives. If you feel strongly that the precoded information is wrong, please rate your confidence in the preloaded information and then consult your V-Dem contact. You will have to rate confidence in all the available years in order to proceed to the next question.

In order to avoid spending time on short-lived executives, we have included only executives who held office for at least 100 days.

#### 4.1.1.1 Regime support location (v2regsuploc)

*Long tag:* vdem\_cy\_v2regsuploc

*Original tag:* v2regsuploc

*Dataset citation:* Coppedge et al. (2024), Pemstein et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 26674, Percent: 96.8

*Non-missing observations in chosen unit:* Sum: 26674, Percent: 89.53

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

VARIABLE TYPE: C

PROJECT MANAGER(S): Carl Henrik Knutsen

ADDITIONAL VERSIONS: \*\_nr

QUESTION: In which geographic area do the support groups for the current political regime mainly reside?

RESPONSES:

0: Abroad.

1: In the capital.

2: In urban areas outside the capital.

3: In rural areas.

4: The groups are not concentrated in any particular area.

SCALE: Nominal

DATA RELEASE: 11-14.

CROSS-CODER AGGREGATION: Mode.

quot;Tiesquot; between categories receive the value 4.

CLEANING: Set to missing where v2regint is 0.

CITATION: V-Dem Codebook (see suggested citation at the top of this document).

YEARS: 1789-2023

DEFAULT DATE: Default date for this variable is January 1.

#### 4.1.2 V-Dem Indicators - Exclusion

##### Instructions to the coders (as shown in the surveys)

###### **Exclusion:**

The following survey contains questions pertaining to exclusion. Political, economic and social well-being may depend on whether groups or individuals are excluded from positions of power, the state's protection of rights and freedoms, access to public goods and services, and opportunities to work or do business with the state.

Please bear in mind the following definitions as you respond to questions on this survey:

*Exclusion* is when individuals are denied access to services or participation in governed spaces based on their identity or belonging to a particular group. It is not necessary for all members of a group to be excluded in order for group-based exclusion to occur. Exclusion occurs even when only a single individual is excluded based on her or his identity or membership (perceived or actual) in a particular group.

*Political groups* are defined as those who are affiliated with a particular political party or candidate, or a group of parties/candidates. A common form of partisan exclusion is when state services or regulations are implemented in a way that seeks to reward the incumbent's political supporters and punish non-supporters.

*Socio-Economic position* defines groups based on attributes of wealth, occupation, or other economic circumstances such as owning property. Exclusion of economic groups occurs when, for example, those who are not property owners are restricted from voting, or when fees associated with justice, health or education are set at a rate that is unaffordable for poorer individuals.

*Social group* is differentiated within a country by caste, ethnicity, language, race, region, religion, migration status, or some combination thereof. (It does not include identities grounded in sexual orientation, gender, or socioeconomic status.) Social group identity is contextually defined and is likely to vary across countries and through time. Social group identities are also likely to cross-cut, so that a given person could be defined in multiple ways, i.e., as part of multiple groups. Nonetheless, at any given point in time there are social groups within a society that are understood - by those residing within that society - to be different, in ways that may be politically relevant. Contrast Identity group.

*Geographic group* refers to those living in rural or urban areas. Urban areas are defined as an area that meets the following conditions: population density exceeds a threshold of 150 persons per square kilometer and there is access to a sizeable settlement of 50,000 people or more within some reasonable travel time, for example 60 minutes by road. (World Development Report, 2009: 54).

##### 4.1.2.1 Access to public services distributed by urban-rural location (v2peapsgeo)

*Long tag:* vdem\_cy\_v2peapsgeo

*Original tag:* v2peapsgeo

*Dataset citation:* Coppedge et al. (2024), Pemstein et al. (2023)

*Merge scores:*

*Non-missing observations in original unit:* Sum: 18720, Percent: 67.94

*Non-missing observations in chosen unit:* Sum: 18720, Percent: 62.83

*Lost observations in chosen unit:* Sum: 0 Percent: 0

*Description:*

VARIABLE TYPE: C

PROJECT MANAGER(S): Rachel Sigman

ADDITIONAL VERSIONS: \*\_osp, \*\_ord, \*\_codelow, \*\_codehigh, \*\_sd, \*\_mean, \*\_nr

QUESTION: Is access to basic public services, such as order and security, primary education, clean water, and healthcare, distributed equally across urban and rural areas?

CLARIFICATION: Urban areas are defined as an area that meets the following conditions: population density exceeds a threshold of 150 persons per square kilometer, there is access to a sizeable settlement of 50,000 people or more within some reasonable travel time, for example 60 minutes by road. (World Development Report, 2009: 54). This question asks if geographic group is an important cleavage in society for the distribution of public services. Thus, if there are inequalities in access to public services, but these are not mainly due to differentiation between urban and rural areas, the code should be “4” (equal). The situation could of course vary by type of public service, such that a geographic group is denied access to some basic public services but not others. Please base your response on whether access to most of the aforementioned services are distributed equally or unequally.

RESPONSES:

0: Extreme. Because they live in rural areas, 75 percent (percent) or more of the population lack access to basic public services of good quality.

1: Unequal. Because they live in rural areas, 25 percent (percent) or more of the population lack access to basic public services of good quality.

2: Somewhat Equal. Because they live in rural areas, 10 to 25 percent (percent) of the population lack access to basic public services of good quality.

3: Relatively Equal. Because they live in rural areas, only 5 to 10 percent (percent) of the population lack access to basic public services of good quality.

4: Equal. Because they live in rural areas, less than 5 percent (percent) of the population lack access to basic public services of good quality.

5: Rural-Bias: Because they live in urban areas, 25percent or more of the population lack access to basic public services of good quality.

SCALE: Ordinal, converted to interval by the measurement model.

DATA RELEASE: 9-14.

CROSS-CODER AGGREGATION: Bayesian item response theory measurement model (see V-Dem Methodology).

CITATION: Pemstein *et al.* (2024, *V-Dem Working Paper Series* 2024:21); *V-Dem Codebook* (see suggested citation at the top of this document).

YEARS: 1900-2023

CONVERGENCE: Model parameters with convergence issues: universal thresholds.

## 5 Bibliography

(n.d.).

- Aklin, M. & Urpelainen, J. (2014), ‘The global spread of environmental ministries: domestic–international interactions’, *International Studies Quarterly* **58**(4), 764–780.
- Bernauer, T., Böhmelt, T. & Koubi, V. (2013), ‘Is there a democracy–civil society paradox in global environmental governance?’, *Global Environmental Politics* **13**(1), 88–107.
- Boräng, F., Felgendreher, S., Haring, N. & Löfgren, (2019), ‘Committing to the climate: a global study of accountable climate targets’, *Sustainability* **11**(7), 1861.
- Botta, E. & Kozluk, T. (2014), ‘Measuring environmental policy stringency in oecd countries: A composite index approach’, *OECD Economics Department Working Papers* (1177). Date accessed: 23 August 2020.
- Bättig, M. B., Brander, S. & Imboden, D. M. (2008), ‘Measuring countries’ cooperation within the international climate change regime’, *Environmental Science & Policy* **11**(6), 478–489.
- Center for International Earth Science Information Network - CIESIN - Columbia University (2023), ‘Natural resource protection and child health indicators, 2022 release’. Accessed on: 06-11-2023.  
**URL:** <https://doi.org/10.7927/70tj-g487>
- Center for International Earth Science Information Network CIESIN (2019), ‘Natural resource protection and child health indicators, 2019 release’.  
**URL:** <https://doi.org/10.7927/r6mv-sv82>
- Charron, N., Dahlberg, S., Sundström, A., Holmberg, S., Rothstein, B., Alvarado Pachon, N. & Dalli, C. M. (2020), ‘The quality of government: Eu regional dataset, version nov20’, *University of Gothenburg: The Quality of Government Institute*, <https://www.gu.se/en/quality-government>.
- Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., Angiolillo, F., Bernhard, M., Borella, C., Cornell, A., Fish, M. S., Fox, L., Gastaldi, L., Gjerløw, H., Glynn, A., God, A. G., Grahn, S., Hicken, A., Kinzelbach, K., Marquardt, K. L., McMann, K., Mechkova, V., Neundorf, A., Paxton, P., Pemstein, D., Rydén, O., von Römer, J., Seim, B., Sigman, R., Skaaning, S.-E., Staton, J., Sundström, A., Tzelgov, E., Uberti, L., Wang, Y.-t., Wig, T. & Ziblatt, D. (2024), ‘V-dem codebook v14’, Varieties of Democracy (V-Dem) Project.
- Crippa, M., Guizzardi, D., Muntean, M., Schaaf, E., Solazzo, E., Monforti-Ferrario, F., Olivier, J. & Vignati, E. (2020), ‘Fossil co2 emissions of all world countries - 2020 report’. Date accessed: 16 April 2020.  
**URL:** <https://edgar.jrc.ec.europa.eu/overview.php?v=booklet2020>
- Crippa, M., Solazzo, E., Huang, G., Guizzardi, D., Koffi, E., Muntean, M., Schieberle, C., Friedrich, R. & Janssens-Maenhout, G. (2020), ‘High resolution temporal profiles in the emissions database for global atmospheric research’, *Nature Scientific Data* **7**(1), 1–17.
- Donner, S., Hartmann, H., Härterich, C. & Steinkamp, S. (2020), *Transformation Index of the Bertelsmann Stiftung 2020*, Bertelsmann Stiftung.  
**URL:** <http://www.bti-project.org>
- Duit, A., Sommerer, T. & Lim, S. (2023), ‘The grace v.2.0 data set’, *Department of Political Science, Stockholm University*.
- Eskander, S. & Fankhauser, S. (2020), ‘Reduction in greenhouse gas emissions from national climate legislation’, *Nature Climate Change* **10**, 750–756.  
**URL:** <https://github.com/smsu1979/Eskander-Fankhauser-NCC-2020->
- European Commission (2023), ‘Eurostat’.  
**URL:** <http://ec.europa.eu/eurostat/data/database>

- European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL) (2020), 'Emissions database for global atmospheric research (edgar), release edgar v5.0 (1970 - 2015) of april 2020'. Date accessed: 27 February 2021.  
**URL:** [https://edgar.jrc.ec.europa.eu/overview.php?v=50\\_AP](https://edgar.jrc.ec.europa.eu/overview.php?v=50_AP)
- EVS (2020), 'European Values Study 2017: Integrated Dataset (EVS 2017)'.  
**URL:** <https://doi.org/10.4232/1.13560>
- EVS (2021), 'EVS Trend File 1981-2017'.  
**URL:** <https://doi.org/10.4232/1.13736>
- FAO (2023), 'Faostat land, inputs and sustainability, land use indicators'. Available at: <http://www.fao.org/forest-resources-assessment/en/>, Rome, Italy.
- Food and Agriculture Organization of the United Nations (2020), 'Global forest resources assessments'.  
**URL:** <http://www.fao.org/forest-resources-assessment/en/>
- Food and Agriculture Organization of the United Nations (2021), 'Aquastat database'. Date accessed: 10 June 2021.  
**URL:** <http://www.fao.org/aquastat/statistics/query/index.html>
- Global Footprint Network (2019), 'National footprint and biocapacity accounts (1961-2016), 2019 edition'. Date accessed: 21 October 2020.  
**URL:** <https://data.footprintnetwork.org>
- Global Footprint Network (2023), 'National footprint and biocapacity accounts (1961-2022), 2023 edition'. Date accessed: 5 December 2023.  
**URL:** <https://data.footprintnetwork.org>
- Grantham Research Institute on Climate Change and the Environment & Sabin Center for Climate Change Law (2021), 'Climate change laws of the world database'. Date accessed: 7 June 2021.  
**URL:** [climate-laws.org](http://climate-laws.org)
- Guha-Sapir, D. (2020), 'Em-dat, the emergency events database'. Date accessed 23 December 2020.  
**URL:** [www.emdat.be](http://www.emdat.be)
- Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E. & Puranen, B. e. a. (2021), 'World Values Survey Time-Series (1981-2020) Cross-National Data-Set: Data File Version 2.0.0'.  
**URL:** <https://doi.org/10.14281/18241.15>
- Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., J., D.-M., M. Lagos, P. N., Ponarin, E. & B. Puranen, e. a. (2020), 'World Values Survey: Round Seven – Country-Pooled Datafile'.  
**URL:** <http://www.worldvaluessurvey.org/WVSDocumentationWV7.jsp>
- Halpern, B., Longo, C., Hardy, D., McLeod, K., Samhour, J. & Katona, S. e. a. (2012), 'An index to assess the health and benefits of the global ocean', *Nature* **488**, 615–620.
- Halpern, B., Longo, C., Hardy, D., McLeod, K., Samhour, J. & Katona, S. e. a. (2018), 'Ocean health index'. ohi-global version: Global scenarios data for Ocean Health Index.  
**URL:** <https://github.com/OHI-Science/ohi-global/releases>
- Heichel, S., Holzinger, K., Sommerer, T., Liefferink, D., Pape, J. & Veenman, S. (2008), Research design, variables and data, in K. Holzinger, C. Knill & H. Jörgens, eds, 'Environmental Policy Convergence in Europe: The Impact of International Institutions and Trade', Cambridge University Press, Cambridge, pp. 64–97. Date accessed: 24 March 2020.  
**URL:** <https://www.polver.uni-konstanz.de/en/holzinger/research/research-projects/environmental-policy-convergence-in-europe-envipolcon/project-deliverables/>
- Holzinger, K., Knill, C. & Sommerer, T. (2011), 'Is there convergence of national environmental policies? an analysis of policy outputs in 24 oecd countries', *Environmental politics* **20**(1), 20–41. Date accessed: 23 July 2020.  
**URL:** <https://www.polver.uni-konstanz.de/holzinger/research/research-projects/policy-wandel-in-der-umweltpolitik-der-einfluss-von-nationalen-vetospielern-und-transnationalen-policy-learning/der-datensatz-environmental-policy-chance-envipolchange/>

- International Renewable Energy Agency (2024), ‘Power capacity and generation statistics’. Date accessed: 22 January 2024, Copyright: IRE 2024.  
**URL:** <https://pxweb.irena.org/pxweb/en/IRESTAT/>
- ISSP Research Group (1995), ‘International social survey programme: Environment i - issp 1993’, GESIS Data Archive, Cologne. ZA2450 Data file Version 1.0.0, <https://doi.org/10.4232/1.2450>. Date accessed: 17 February 2016.
- ISSP Research Group (2003), ‘International social survey programme: Environment ii - issp 2000’, GESIS Data Archive, Cologne. ZA3440 Data file Version 1.0.0, <https://doi.org/10.4232/1.3440>. Date accessed: 17 February 2016.
- ISSP Research Group (2019), ‘International social survey programme: Environment iii - issp 2010’, GESIS Data Archive, Cologne. ZA5500 Data file Version 3.0.0, <https://doi.org/10.4232/1.13271>. Date accessed: 17 February 2016.
- Lindberg, S. I., Düpont, N., Higashijima, M., Kavasoglu, Y. B., Marquardt, K. L., Bernhard, M., Döring, H., Hicken, A., Laebens, M., Medzihorsky, J., Neundorf, A., Reuter, O. J., Ruth–Lovell, S., Weghorst, K. R., Wiesehomeier, N., Wright, J., Alizada, N., Bederke, P., Gastaldi, L., Grahn, S., Hindle, G., Ilchenko, N., von Römer, J., Wilson, S., Pemstein, D. & Seim, B. (2022), ‘Varieties of party identity and organization (v-party) dataset v2’, *Varieties of Democracy (V-Dem) Project*.  
**URL:** <https://doi.org/10.23696/vpartyds2>
- Mitchell, R. B. (2020), ‘International environmental agreements database project (version 2020.1)’. Date accessed: 15 November 2020.  
**URL:** <http://iea.uoregon.edu/>
- Mitchell, R. B., Andonova, L. B., Axelrod, M., Balsiger, J., Bernauer, T., Green, J. F., Hollway, J., Kim, R. E. & Morin, J.-F. (2020), ‘What we know (and could know) about international environmental agreements’, *Global Environmental Politics* **20**(1), 103–121.
- NSD - Norwegian Centre for Research Data (2020), ‘European social survey cumulative file, ess 1-9’. Data Archive and distributor of ESS data for ESS ERIC.  
**URL:** <http://www.europeansocialsurvey.org/>
- Ocean Health Index (2022), ‘Global scenarios data for ocean health index’. ohi-global version 2022.  
**URL:** <https://github.com/OHI-Science/ohi-global/releases>
- Organisation for Economic Co-operation and Development (2023), ‘Country statistical profiles: Key tables from OECD’.  
**URL:** [https://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd\\_20752288](https://www.oecd-ilibrary.org/economics/country-statistical-profiles-key-tables-from-oecd_20752288)
- Organisation for Economic Co-operation and Development (OECD) (2020a), ‘Environmental protection expenditure account (epea)’. Date accessed: 13 May 2020.  
**URL:** <https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-17-004>
- Organisation for Economic Co-operation and Development (OECD) (2020b), ‘Environmentally adjusted multifactor productivity’. Date accessed: 13 May 2020.  
**URL:** [oe.cd/eamfp](http://oe.cd/eamfp)
- Organisation for Economic Co-operation and Development (OECD) (2020c), ‘Green growth indicators database’. Date accessed: 23 August 2020.  
**URL:** <https://stats.oecd.org/>
- Organisation for Economic Co-operation and Development (OECD) (2020d), ‘Policy instruments for the environment (pine)’. Date accessed: 13 May 2020.  
**URL:** [oe.cd/pine](http://oe.cd/pine)
- Pemstein, D., Marquardt, K. L., Tzelgov, E., Wang, Y.-t., Medzihorsky, J., Krusell, J., Miri, F. & von Römer, J. (2023), ‘The v-dem measurement model: Latent variable analysis for cross-national and cross-temporal expert-coded data’, *Varieties of Democracy Institute Working Paper* **21**(8th Ed).



- Povitkina, M., Alvarado Pachon, N. & Dalli, C. M. (2021), ‘The quality of government environmental indicators dataset, version sep21’, *University of Gothenburg: The Quality of Government Institute*, <https://www.gu.se/en/quality-government> .
- Rodríguez, M. C., Hašičič, I. & Souchier, M. (2018), ‘Environmentally adjusted multifactor productivity: methodology and empirical results for oecd and g20 countries’, *Ecological Economics* **153**, 147–160.
- Ross, M. & Mahdavi, P. (2015), ‘Oil and gas data, 1932-2014’.  
**URL:** <http://dx.doi.org/10.7910/DVN/ZTPW0Y>
- Schiller, C. & Hellmann, T. (2022), ‘Sustainable governance indicators 2022’, *Bertelsmann Stiftung* .  
Date accessed: 03 October 2022.  
**URL:** <https://www.sgi-network.org>
- Teorell, J., Sundström, A., Holmberg, S., Rothstein, B., Alvarado Pachon, N., Dalli, C. M., Lopez Valverde, R. & Nilsson, P. (2024), ‘The quality of government standard dataset, version jan24’, *University of Gothenburg: The Quality of Government Institute* .  
**URL:** <https://www.gu.se/en/quality-government> doi:10.18157/qogstdjan24
- The World Bank (2021), ‘Climate change knowledge portal’. Date accessed 2 June 2021.  
**URL:** <https://climateknowledgeportal.worldbank.org>
- Wendling, Z. A., Emerson, J. W., de Sherbinin, A., Esty, D. C., Hoving, K., Ospina, C., Murray, J., Gunn, L., Ferrato, M., Schreck, M. et al. (2020), ‘Environmental performance index’, *New Haven, CT: Yale Center for Environmental Law And Policy* .
- Wolf, M., Emerson, J. W., Esty, D. C., de Sherbinin, A. & Wendling, Z. A., e. a. (2022), ‘2022 environmental performance index’, *New Haven, CT: Yale Center for Environmental Law and Policy* .  
Date accessed: 17 October 2022.  
**URL:** [epi.yale.edu](http://epi.yale.edu)
- World Bank (2022), ‘World development indicators’.  
**URL:** <https://databank.worldbank.org/source/world-development-indicators>
- World Resource Institute & the Access Initiative (2015), ‘Environmental democracy index’. Date accessed: 8 February 2021.  
**URL:** <https://environmentaldemocracyindex.org/>
- York University Ecological Footprint Initiative Global Footprint Network (2023), ‘National footprint and biocapacity accounts, 2023 edition’. Produced for the Footprint Data Foundation and distributed by Global Footprint Network. Available online at: <https://data.footprintnetwork.org>.  
**URL:** <http://www.footprintnetwork.org>