EUROPEAN COMMISSION

PROTOTYPE DASHBOARDS FOR MONITORING THE GEOPOLITICAL, GREEN AND DIGITAL DIMENSIONS OF RESILIENCE[1]

[1] This publication is a technical paper by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It provides background for the dashboards presented in the 2020 Strategic Foresight Report of the European Commission (Strategic foresight – charting the course towards a more resilient Europe, COM(2020) 493). Colleagues from several Commission Services have contributed with useful comments on the choice of the indicators.

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1. INGREDIENTS OF THE DASHBOARDS

The proposed prototype dashboards aim at illustrating how such tools may look for the geopolitical, green, and digital dimensions. The prototype in the geopolitical dimension focuses on raw materials. A secure supply of raw materials is a relevant aspect under the geopolitical dimension of resilience. The prototype dashboard along the green dimension focuses on Member States' relative vulnerabilities and capacities with regard to climate change mitigation and adaptation, and a range of indicators for environmental degradation and protection. The digital resilience dashboard uses the Digital Economy and Society Index (DESI[2]) as a starting point, complemented with others the importance of which were highlighted by the COVID-19 crisis.

All three prototypes use a first selection of easily available and ready-made indicators from publicly available data sources. These include the World Bank, FAO, the European Environmental Agency, the Emergency Events Database of the Centre for Research on the Epidemiology of Disasters (EM-DAT), Commission Services, the World Mining Database, the British Geological Survey World Mineral Production database, US Geological Survey historical statistics, data collections of various research institutions, Eurobarometer, and Eurostat. The novelty is rather in their multidimensional selection and resilience focus than in the creation of new indicators from raw data.

Each aspect of the dashboard presents vulnerability and resilience capacity indicators. They use the latest statistical year (usually 2018 or 2019, sometimes earlier). As such, they depict the current but not necessarily the momentary situation of countries.

The first group of indicators includes country features that indicate how important and/or difficult a given transition is for the country. Indicators can also point to specific vulnerable groups that can be particularly challenged by the transitions, or important areas where future shocks may materialise. The resilience capacity side looks into the ability of a country to prepare for such shocks, to mitigate the vulnerabilities, and to turn them into opportunities.

1.1. Supply security of raw materials

The prototype in the geopolitical dimension focuses on raw materials, an important sub-aspect of the geopolitical dimension[3]. The starting point is the Raw Materials Scoreboard[4] of DG GROW and the JRC (European Commission, 2018). It also draws from the methodology of the criticality assessment (see Blengini et al., 2017). A detailed overview of the variables with precise definitions is available in Table 2 in Annex 1.

Indicators on vulnerabilities look at the intensity of material demand, import dependence, and elements from the criticality assessment. Material demand is represented by direct **domestic material consumption** of raw materials, and a combined measure of their **direct and indirect consumption**. Two important sub-aggregates (**base metal ores** and **non-metallic minerals for construction**) are also included, to hint at the vast heterogeneity by detailed materials. On top of per capita measures, an indicator on **resource intensity** normalises material demand by GDP, and gives insight into the efficiency with which the economy uses resources.

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2 Digital Economy and Society Index 2020 (https://ec.europa.eu/digital-single-market/en/desi).

3 The dashboard takes a broad view on raw materials, as disaggregation into more specific subcategories would make the dashboard too detailed and difficult to read.

4 https://ec.europa.eu/growth/content/raw-materials-scoreboard-2018_en

The next group of vulnerabilities relate to the degree of external dependence. High **import dependency of base metal ores** and **non-metallic minerals for construction** implies that external supply disturbances would have a high impact.

To refine these two main aspects (importance of materials and supply risk), the last set of vulnerability indicators are country-level adoptions of the criticality assessment[5]. They only look at the same seven base metals (iron, aluminium, copper, lead, nickel, tin, and zinc) as for domestic material consumption and import dependence. The first indicator displays an average **supplier concentration** for these materials, while the second depicts their **economic importance** (importance-weighted GDP share of the detailed industries that use these materials).

The resilience capacity side looks at factors and policies that can increase the security of supply and the capacity to deal with shortages. **Domestic extraction of critical raw materials,** and **intra EU trade** (in **recyclable raw materials, base metals** and **non-metallic minerals for construction**) are key aspects to increase supply security. **Public awareness of the importance of material efficiency** can reduce waste and material use.

Resource efficiency makes societies better equipped to avoid and face shortages. Countries with high rates of **recycling of e-waste** and intensive **circular material use** have in general a lower demand for new materials and are thus less exposed to shocks. Innovation is also an important factor, captured by **patents in recycling and secondary raw materials, product redesign practices for efficient use or recycling** and **business R&D expenditures in material sectors**. The rate of **change in resource efficiency** measures the rate at which the efficiency of material use is improving. Finally, the rate of **change in supplier diversification for base metals** depicts trade-induced reductions in supply risk.

1.2. The green dimension

The prototype dashboard along the green dimension focuses on Member States' relative vulnerabilities and capacities with regards to climate change mitigation and adaptation and a range of other indicators for environmental degradation. Its starting point is the index of the EU Global Climate Change Alliance (Miola et al., 2015). Additional variables describing country efforts and achievements towards mitigation, adaptation, and biodiversity complement the prototype dashboard. A detailed overview of the variables with precise definitions is available in Table 3 in Annex 1.

The vulnerability side includes indicators for environmental threats like **biodiversity loss** (through the common farmland bird index), the pressure on the renewable freshwater resources (**water exploitation index**), **soil erosion by water**, the impact of air pollution (**years of life lost attributable to PM 2.5 pollution**), and **GHG emissions per capita.**

Exposure is the second part of the vulnerability side. It captures the change in the number of days when cooling is needed, and historical fatalities due to flood, storm, extreme temperature or wildfire events together with economic losses of extreme weather as indicators for the future severity of such events. Historical frequencies of events (the same as under exposure) are included to indicate the future likelihood of climate related natural hazards.

The dashboard also looks at specific vulnerable groups. **People living in low elevation coastal zones** proved to be at high risk of sea level rises and storm surges, major consequences of climate change. The energy transition may pose additional difficulties for those who have **problems with keeping their home adequately warm**. Finally, people

[5] The most recent list of critical raw materials and their selection criteria are presented in COM(2017) 490, (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017DC0490).

employed in energy intensive sectors may face important sectoral shifts and need reskilling.

In the resilience capacity side, there are government-related dimensions (aspects of institutional quality and regulation like public expenditures on environmental protection, citizen involvement, the size of protected areas), and factors from the economic and environmental domain.

For the institutional quality and regulations towards climate change and environmental protection, the dashboard includes the size of the **commitment to the UN initiative** for climate action, the status of **habitat and species protection** and the **size of Natura 2000 protected areas**, as biodiversity and ecosystem services are critical to sustaining human life and well-being, mitigating climate change and its effects. **Public expenditures on environmental protection** provide insights on the efforts of public actions to environmental protection. The engagement of people and communities are also included as essential elements for the green transition (**population covered by the Covenant of Mayors initiative** and **citizen involvement**). The progress in the implementation of important adaptation policies is captured by a variable derived from the **adaptation policies scoreboard**.

The part on economic and environmental factors looks at **environment-related technologies,** as the development of patents on environmental-related technologies is key for climate change mitigation and adaptation. **Energy productivity** measures the energy footprint of countries. The importance of forest areas and land in ecosystem services, particularly in capturing CO_2 is represented by a measure of **GHG absorption by ecosystems**. Finally, the **share of insured losses due to climate related extreme events** is included, as insurance is a major tool to transfer the losses to a party that is more prepared to absorb them.

1.3. Digital capacities

The digital resilience dashboard uses the Digital Economy and Society Index (DESI) as a starting point, complemented with others the importance of which was highlighted by the COVID-19 crisis. A detailed overview of the variables with precise definitions is available in Table 4 in Annex 1. The overall composite DESI index tracks the position and evolution of countries' digital performance (**digital economy**). Its sub-component **e-government** indicates how well countries are equipped to offer digital services to their citizens and to manage the digital transition. A crucial ingredient for managing the digital transition is the individual **digital skill level** of citizens, another sub-component of DESI. They are complemented with indicators which enable better coping with the lockdown and physical distancing, like **teleworking** and **e-health.** They are also important for the digital transition in general.

1.4. Reading the dashboards

By their nature, the dashboards present a multidimensional picture where different variables are placed next to each other, letting the reader assess country performance across a number of dimensions even within a specific topic. The main scope of the dashboards is not to rank countries, but rather to highlight strengths and areas for improvement, for further analysis. For this purpose, it is important to look at all of them in parallel.

For each variable, a scale of three colours indicates country performance, from dark blue (most resilient/least vulnerable) to light yellow (least resilient/most vulnerable), through light blue (medium levels). The colour scheme is relative, and shows the performance of EU countries in the latest available (statistical) year compared to the pooled values of all

available data since 2007[6]. Hence, countries in the yellow range can still do well in absolute terms (and vice versa for the blue range).[7]

In particular, colours are assigned based on the distance from the mean of the underlying distribution in terms of standard deviations. The dashboards presented below refer to one standard deviation, but this value can be modified.

It is important to bear in mind that unlike composite indicator frameworks, dashboards do not have a hierarchic structure, nor assign importance weights to the different indicators. Extreme values in a single indicator may point to vulnerabilities or resilience bottlenecks, despite good performance in other aspects.

2. THE DASHBOARDS

Table 1 presents the dashboards related to the geopolitical, green, and digital dimensions. Countries are reported in the Eurostat protocol order (alphabetic order of country names in their own language). Tables 5, 6 and 7 in Annex 2 report the full correlation structure of the underlying raw data (for the latest available statistical year).

The dashboards allow getting a sense of the patterns of relative vulnerabilities and resilience capacities as well as common issues across Member States. For instance, the raw materials dashboard (geopolitical dimension, top panel) indicates that many countries fare well in relative terms with respect to import dependence of base metals, but less so to import dependence of non-metallic minerals for construction. In absolute terms, however, import dependence for base metals is much higher than for non-metallic minerals. Among capacities, the spending on innovation in material sectors is a strong point in many countries. It is important to stress that currently there is no possibility to reflect the economic structure of individual Member States in this prototype, which affects many of its indicators.

In the green dimension (middle panel), indicators like the share of population covered by the Covenant of Mayors and the size of Natura 2000 protected areas provide a relatively positive picture for many countries. By contrast, water exploitation, biodiversity loss, greenhouse gas absorption by ecosystems, public expenditure on environmental protection and the frequency and fatality of floods, storms and wildfires highlight potential weaknesses.

In the digital dimension (bottom panel), many countries have strong capacities in e-government and the overall digital economy. This reflects a generally improving penetration and adoption of new technologies. At the same time, digital skills, teleworking capacities and the use of e-health show a more contrasted picture.

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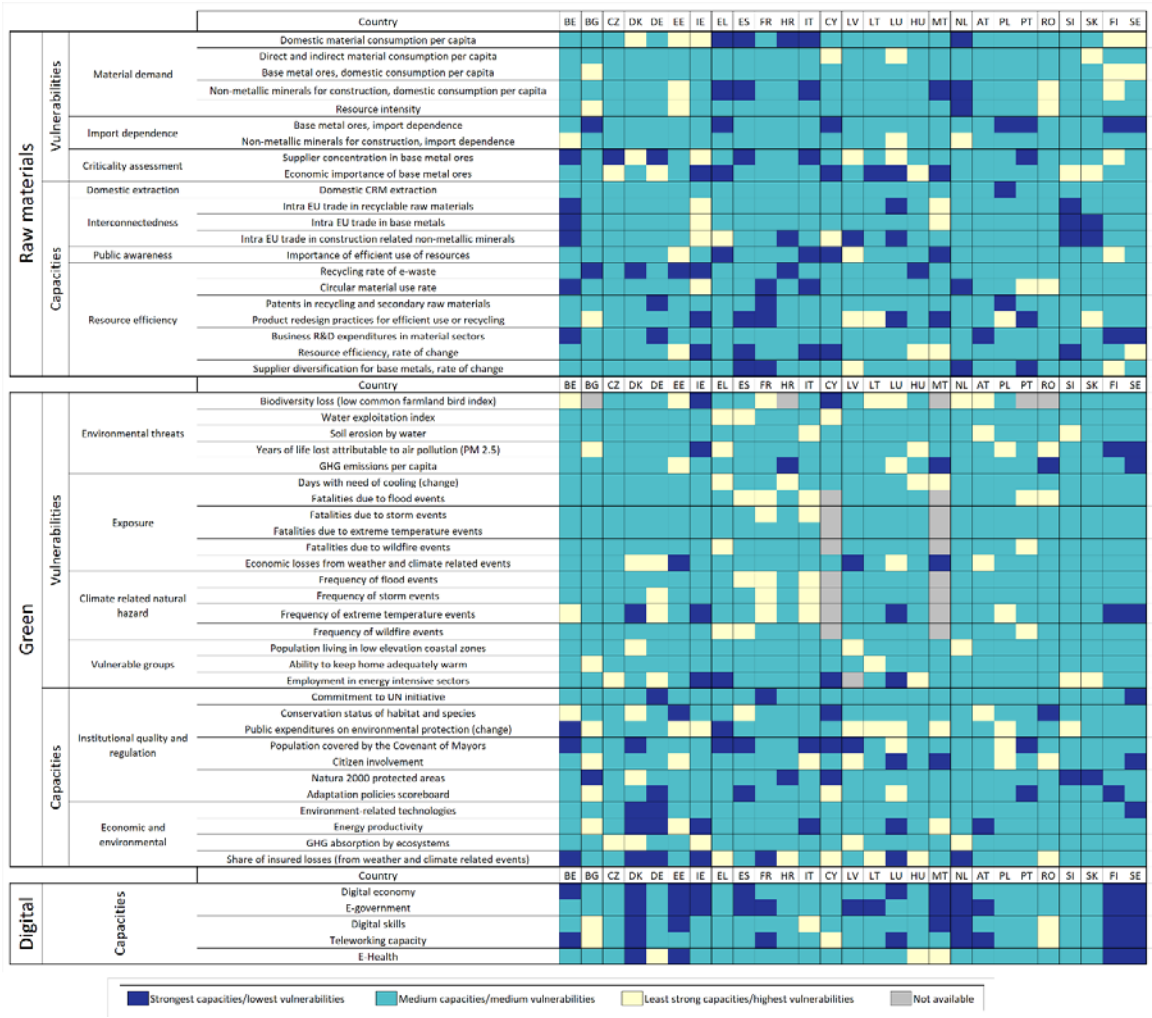
[6] Data availability across countries may vary from year to year. In the current exercise, all values have been taken into account. It means that countries with longer available data series will get a somewhat bigger importance in the distribution.
Moreover, if no data is available for a variable at the beginning of the period, the 2007-2019 distribution automatically refers to the latest available values. The 2007-2019 average thus becomes identical to the 2008-2019 average.

[7] For example, the range for strong relative performance in import dependence in metal ores is 0-50%, which does not necessarily indicate a strong absolute performance. Similarly, the range for weak relative performance in import dependence for non-metallic minerals starts at 35%, which is not so high in absolute terms.

Table 1: Prototype dashboards for the geopolitical, green and digital dimensions

Note: The dashboards include a set of indicators important to grasp the level of vulnerability and resilience capacities within a country, relative to others. Data typically refers to 2018 and 2019 (see also Tables 2, 3 and 4 in Annex 1). The colours indicate the distance from the mean of all the available values for EU countries in the 2007-2019 period. Dark blue indicates a value that is at least one standard deviation better, while yellow indicates a value that is at least one standard deviation worse than the mean.



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ANNEX 1: INFORMATION ON THE INDICATORS

Table 2: Variables on raw material supply security

Note: The vulnerability indicators are such that the higher the more vulnerable. The resilience capacity indicators are such that the higher the more resilient.

Variable	Motivation	Full definition	Source	Year
VULNERABILITIES				
Material demand				
Domestic material consumption per capita	A country's material consumption is an important indicator of its economy's need for materials and gives insight into the efficiency with which its economy uses natural resources.	Domestic material consumption (DMC) indicates the total amount of raw materials actually consumed domestically by resident units. DMC of a given country's national economy can be calculated as direct material input minus physical exports, reported as tonnes per capita. 3-year average.	Eurostat series t2020_rl110	2019
Direct and indirect material consumption per capita	A country's combined direct and indirect raw material consumption is an overall indicator of its economy's need for raw materials.	It expresses the total amount of raw materials that were extracted to produce the goods consumed within an economy. It is a measure of the total amount of materials directly and indirectly used. 3-year average, reported as tonnes per capita.	https://green-horizons.eu/indicator/raw-material-consumption-rmc-capita	2015
Base metal ores, domestic consumption per capita	This indicator shows the use of raw materials in one of its main categories. A high value indicates a high importance of base metal ores, hence high vulnerability to disruptions of their supply.	Domestic material consumption (DMC) of base metal ores (iron – MF21, copper – MF221, nickel – MF222, lead – MF223, zinc – MF224, tin – MF225, bauxite and other aluminium – MF227) indicates the total amount of material actually consumed domestically by resident units. DMC of a given country's national economy can be calculated as direct material input minus physical exports. 3-year average, reported as tonnes per capita.	Eurostat series env_ac_mfa	2018
Non-metallic minerals for construction, domestic consumption per capita	This indicator shows the use of raw materials in one of its main categories. A high value indicates a high importance of construction related non-metallic minerals, hence high vulnerability to disruptions of their supply.	Domestic material consumption (DMC) of construction related non-metallic minerals (marble, granite, sandstone, porphyry, basalt, other ornamental or building stone (excluding slate) – MF31, chalk and dolomite – MF32, slate – MF33, limestone and gypsum – MF36, clays and kaolin – MF37, sand and gravel – MF38) indicates the total amount of material actually consumed domestically by resident units. DMC of a given country's national economy can be calculated as direct material input minus physical exports. 3-year average, reported as tonnes per capita.	Eurostat series env_ac_mfa	2018
Resource intensity	This indicator normalizes the use of raw materials by total production (GDP). A high value indicates a high importance of raw materials, hence high vulnerability to disruptions of their supply.	Domestic material consumption (in kg) divided by GDP (chain-linked volumes, base 2010). 3-year average	Eurostat series t2020_rl100 (inverse)	2019

Variable	Motivation	Full definition	Source	Year
Import dependence				
Base metal ores, import dependence	High import dependence implies that supply disturbances would have a high impact.	Imports of metal ores (gross ores, same list as for domestic material consumption) divided by direct material input. 3-year average.	JRC elaboration, using Eurostat series env_ac_mfa	2018
Non-metallic minerals for construction, import dependence	High import dependence implies that supply disturbances would have a high impact.	Imports of construction related non-metallic minerals (same list as for domestic material consumption) divided by direct material input. 3-year average	JRC elaboration, using Eurostat series env_ac_mfa	2018
Criticality assessment				
Supplier concentration in base metal ores	If a large part of non-EU material supply comes from a small number of countries, there is a high likelihood of supply disturbances.	This variable implements a simplified version of the methodology used in the criticality assessment (see Blengini et al, 2017). It is a concentration (Herfindahl) index (sum of square) of the shares of non-EU supplier countries. It is calculated first for iron, aluminium, copper, lead, nickel, tin, and zinc. Then the values are averaged, using the MS level relative values of metal imports as weights.	Material supplier shares and import values are from the Eurostat trade series DS-016894, HS2 and HS4 level. Iron: group 72. Copper: 74, excluding 7410-7419. Nickel: 75, excluding 7507-08. Aluminium: 76, excluding 7607-7616. Lead: 78, excluding 7806. Zinc: 79, excluding 7907. Tin: 80, excluding 8007.	2019
Economic importance of base metal ores	It measures the MS level importance of those sectors that use these raw materials (iron, aluminium, copper, lead, nickel, tin, zinc). The higher the importance the higher the impact of a potential supply shock on a country.	This variable mimics the methodology of the criticality assessment. The method described in Blengini et al (2017) is adopted to the country level the following way. We use a common (EU-wide) relative importance of industrial sectors for each of the metals assessed (sectorial allocation of the material use). Then those weights are applied to the MS-specific value added of the sectors, normalized by the country's GDP, material by material. Finally, the material level measures are aggregated as an imports-value weighted average.	Material importance per sector data is from Blengini et al. (2017). Eurostat for industrial value added at factor cost (sbs_na_ind_r2). Import values are from Eurostat (DS-016894 same categories as under supplier concentration).	2014
CAPACITIES				
Domestic extraction				
Domestic CRM extraction	It indicates the combined value of critical raw material extraction per country, which is a key aspect to increase supply security.	Extraction volumes in tonnes (or kgs) per each MS, multiplied by unit prices and added up across all mined critical raw materials.	World Mining Database (volumes), www.criticalrawmaterials.org for fluorspar prices, www.focus-economics.com for coking coal prices, and USGS historical statistics for minerals and material conditions for all other CRM prices.	2015

Variable	Motivation	Full definition	Source	Year
Interconnectedness				
Intra EU trade in recyclable raw materials	Contributing to and taking advantage of the EU-level flow of recyclable materials helps to mitigate supply risks and vulnerabilities.	Intra EU imports plus exports of all recycled raw materials over GDP (current price).	Eurostat series env_wastrd and nama_10_gdp	2019
Intra EU trade in base metals	Active intra-EU trade is an important capacity to mitigate supply risks and vulnerabilities.	Intra EU imports plus exports of base metals over GDP (current price).	Eurostat series DS-016894 and nama_10_gdp. Same product groups as under supplier concentration.	2019
Intra EU trade in construction related non-metallic minerals	Active intra-EU trade is an important capacity to mitigate supply risks and vulnerabilities.	Intra EU imports plus exports of construction related non-metallic minerals over GDP (current price).	Eurostat series DS-016894 and nama_10_gdp. The product groups are chosen to be similar to the material flows accounts categories under domestic material consumption: 2505-2508, 2514-2518, 2520-2323.	2019
Public awareness				
Importance of efficient use of resources	Public awareness of the importance of material efficiency can reduce waste and material use.	"The efficient use of resources means getting the greatest benefit out of scarce resources, such as metals, materials, land or water, while also causing less environmental damage. How important is it for you that Europe uses its resources more efficiently? Would you say it is ...?" The share of answering "very important".	Eurobarometer 388 Q1	2013
Resource efficiency				
Recycling rate of e-waste	Higher recycling rate helps lowering the demand for new materials (particularly for e-products), which makes a country less exposed to supply shocks.	Recycling rate for waste electrical and electronic equipment (WEEE). The indicator is calculated by multiplying the 'collection rate' with the 'reuse and recycling rate', both as set out in the WEEE Directive.	Eurostat series cei_wm050	2018, 2017 (BG, CY, HU, LT, LU, MT, PL, PT, SI, SK) 2016 (RO), 2015 (IT)
Circular material use rate	Higher circular material use helps lowering the demand for new materials and in general makes a country less exposed to supply shocks.	The circular material use rate measures the share of total material use recovered and fed back into the economy (in percentage).	Eurostat series env_ac_cur	2017
Patents in recycling and secondary raw materials	Innovation in recycling and secondary raw materials improves the performance of the circular economy, which reduces the exposure to supply shocks and enables coping with them.	The indicator measures the number of patents related to recycling and secondary raw materials.	Eurostat series cei_cie020	2015

Variable	Motivation	Full definition	Source	Year
Product redesign practices for efficient use or recycling	Product redesign can lead to a more efficient use of (recycled) materials or material substitution. All these decrease the exposure to supply shocks, and facilitate coping.	"Has your company undertaken any of the following activities in the last 3 years? Redesign products and services to minimise the use of materials or use recycled materials." The share of answering yes.	Eurobarometer 441 Q1.5	2016
Business R&D expenditures in material sectors	R&D expenditures in material sectors promote innovation activities that can increase resource efficiency and support material substitution. Both decrease the exposure to supply shocks and facilitate coping.	R&D expenditures for the following sectors: Mining and quarrying (B), Manufacture of wood and wood products (C16), Manufacture of paper and paper products (C17), Manufacture of rubber and plastic products (C22), Manufacture of other non-metallic mineral products (C23), Manufacture of basic metals (C24), Sewerage, waste management and remediation activities (E37-39). Euro per capita.	Eurostat series rd_e_berdindr2	2017, 2018 (CZ, PT, SK), 2013 (LU)
Resource efficiency, rate of change	Increasing resource efficiency is a measure of the evolution of the effectiveness with which resource consumption produces added value. The higher the growth, the more has been achieved in reducing vulnerability to supply shocks.	The negative of the resource intensity compound annual growth rate (10 years). Resource intensity is the 3-year average of domestic material consumption (in kg) divided by GDP.	Eurostat series t2020_rl100 (inverse to get resource intensity)	2019
Supplier diversification for base metals, rate of change	An increase in supplier diversification indicates a reduction in supply risk using international trade, hence a resilience capacity at work.	The negative of the rate of change (10 years) of the supplier concentration for base metals.	Material supplier shares and import values are from the Eurostat trade series DS-016894, HS2 and HS4 level. See the entry for suppler concentration for the choice of product categories.	2019

Table 3: Variables on climate change mitigation, adaptation, and environmental degradation

Note: The vulnerability indicators are such that the higher the more vulnerable. The resilience capacity indicators are such that the higher the more resilient

Variable	Motivation	Full definition	Source	Year
VULNERABILITIES				
Environmental threats				
Biodiversity loss (low common farmland bird index)	Birds can act as 'indicator species' providing a barometer of the health of the environment. Being close to or at the top of the food chain, they reflect changes in the ecosystem rather rapidly compared to other species. In general, a decrease in the index means that the balance of bird species population trends are negative, representing biodiversity loss (OECD Compendium of Agri-environmental Indicators section 13.2) and signalling environmental stress.	The OECD farmland birds index is an average population trend in a group of species suited to track trends in the condition of farmland habitats.	Eurostat series env_bio2 (negative of)	2018, 2017 (CY, EE, ES, IT, LV, NL, PL), 2016 (EL, IE), 2013 (DE), N.A. (BG, HR, MT, PT, RO)
Water exploitation index	Water scarcity is driven by (i) water demand, which is largely affected by population trends and (ii) socio-economic developments, and climate conditions, which control the availability of renewable freshwater resources and the seasonality of water supply. The water exploitation index aims to illustrate the pressure on the renewable freshwater resources as a consequence of water use for human purposes.	The water exploitation index WEI+ is estimated as the ratio of water use versus renewable freshwater resources for a given spatial unit, e.g. river basin or country level, in a defined time period i.e. seasonal (quarter) or annual.	European Environmental Agency (IND-11-en)	2017
Soil erosion by water	Soil erosion by water is a major environmental threat, which can be exacerbated further by climate change and human activity.	It estimates the soil loss by water erosion processes and gives an indication of the area under risk of severe soil loss. It is expressed as a percentage of the total non-artificial erosive area in the country.	Eurostat series sdg_15_50	2016
Years of life lost attributable to air pollution (PM 2.5)	Epidemiological studies have shown that air pollution is associated with cardiovascular and respiratory diseases, leading to increased sickness, hospital admissions, and premature death. Assessing the health effect attributed to air pollutants is critical to managing air pollution risks.	Years of life lost is defined as the years of potential life lost due to premature death, attributable to PM 2.5 air pollution. It is an estimate of the average number of years that a person would have lived if he or she had not died prematurely.	Eionet Report ETC/ATNI 13/2019 for 2017. Air quality in Europe reports of the EEA for earlier years.	2017
GHG emissions per capita	Greenhouse gas emission is a major driver of climate change.	It represents the total GHG emissions in a country, without land use, land use change, and forestry (LULUCF) but including the international aviation.	Energy union indicators webtool, using EEA data. https://ec.europa.eu/energy/data-analysis/energy-union-indicators_en?redir=1	2018
Exposure				
Days with need of cooling (change)	An increase in cooling degree days is a specific indicator of increasing temperature. Its extreme values can also signal more frequent or severe heatwaves.	Temperature-based technical index designed to describe the need for the cooling (air-conditioning) of buildings. Absolute difference in annual days, over ten years.	Eurostat series nrg_chdd_a	2019

Variable	Motivation	Full definition	Source	Year
Fatalities due to flood events	Historical severity of floods points to a vulnerability that can be exacerbated by climate change.	Fatalities due to floods, average number per event over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Fatalities due to storm events	Historical severity of storms points to a vulnerability that can be exacerbated by climate change.	Fatalities due to storms, average number per event over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Fatalities due to extreme temperature events	Historical severity of extreme temperatures points to a vulnerability that can be exacerbated by climate change.	Fatalities due to extreme temperatures, average number per event over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Fatalities due to wildfire events	Historical severity of wildfires points to a vulnerability that can be exacerbated by climate change.	Fatalities due to wildfires, average number per event, average over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Economic losses from weather and climate related events	Economic losses due to weather and climate related extreme events points to a vulnerability that can be exacerbated by climate change.	Economic losses due to weather or climate related extreme events over the period 1980-2017, per capita.	European Environmental Agency (IND-182-en)	2017
Climate related natural hazard				
Frequency of flood events	Historical frequency of floods points to a vulnerability that can be exacerbated by climate change.	Events per year over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Frequency of storm events	Historical frequency of storms points to a vulnerability that can be exacerbated by climate change.	Events per year over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Frequency of extreme temperature events	Historical frequency of extreme temperatures points to a vulnerability that can be exacerbated by climate change.	Events per year over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Frequency of wildfire events	Historical frequency of wildfires points to a vulnerability that can be exacerbated by climate change.	Events per year over the preceding ten years.	EM-DAT	2019, N.A. (CY, MT)
Vulnerable groups				
Population living in low elevation coastal zones	People living in low elevation coastal zones are exposed to sea level rise and storm surges, major consequences of climate change.	Share of total population living in low elevation coastal zones (LECZ). LECZ is defined as the contiguous area along the coast that is less than 10 meters above sea level.	https//sedac.ciesin.columbia.edu/	2010
Ability to keep home adequately warm	The energy transition may pose additional difficulties for those who are unable to keep their home adequately warm already now	The share of those who are unable to keep their home adequately warm (% of total population).	Eurostat series sdg_07_60	2019, 2018 (IE, IT, LU)
Employment in energy intensive sectors	People employed in energy intensive sectors may face important sectoral shifts and need reskilling.	The share of people employed in the following sectors, relative to total employment: C20 (manufacture of chemicals and chemical products), C23 (manufacture of other non-metallic mineral products), C24 (manufacture of basic metals), and	Eurostat series lfsa_egan22d.	2019, 2018 (CY, IE, MT), N.A. (LV)

Variable	Motivation	Full definition	Source	Year
		C29 (manufacture of motor vehicles, trailers and semi-trailers).		
CAPACITIES				
Institutional quality and regulation				
Commitment to UN initiative	Indicator of policy commitment to actions to mitigate and adapt to climate change at global level.	Total amount devoted from the annual government budget to the international 100bn USD commitment for climate finance by 2020, under the United Nations Framework Convention on Climate Change. Expressed as a share of GDP.	Eurostat series sdg_13_50, divided by GDP (nama_10_gdp).	2017, 2016 (LV), 2015 (BG), 2014 (CY)
Conservation status of habitat and species	Habitat and species protection is important for the conservation of biodiversity and ecosystem services that are critical for sustaining human life and well-being, mitigating climate change and its effects.	Average of the share of a favourable assessment of the conservation status of habitats and of the conservation status of species (Article 17 of the Habitats Directive).	European Environmental Agency (DAS-186-en)	2018
Public expenditures on environmental protection (change)	Public expenditures on environmental protection indicate the intensity of public actions.	Government expenditures on environmental protection (3-year average), change over the last ten years, as % of GDP.	Eurostat series gov_10a_exp	2018
Population covered by the Covenant of Mayors	The Covenant of Mayors was launched in 2008 in Europe, to gather local governments voluntarily committed to achieving and exceeding the EU climate and energy targets. A high national share of population that lives in signatory cities is an indication of citizen engagement, local planning and awareness of climate-related challenges.	Share of population covered by the Covenant of Mayors for Climate & Energy, per Member State.	Eurostat series sdg_13_60	2019
Citizen involvement	Indicates the level of citizen involvement in climate-related actions.	Share of respondents who personally took any action to fight climate change over the past six months.	Special Eurobarometer 459 QC5	2017
Nature 2000 protected areas	Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, and thus maintain biodiversity and ecosystem services that are critical to sustaining human life and well-being, mitigating climate change and its effects.	Protected terrestrial area (km2 as percentage of mainland national territory) under Natura 2000, without area only protected under national legislation.	Eurostat series env_bio1	2019
Adaptation policies scoreboard	Indicates the level of implementation of important adaptation policies.	Share of adopted policies identified in the dashboard. Actions in progress count as half.	EC Adaptation preparedness scoreboard, SWD(2018) 460 (2014-2018)	2018

Variable	Motivation	Full definition	Source	Year
Economic and environmental				
Environment-related technologies	Environment-related technologies are key for climate change mitigation and adaptation.	Environment-related inventions per capita.	OECD Green Growth Indicators	2016
Energy productivity	High energy productivity means energy efficiency, hence a lower footprint which is important for mitigation and adaptation to climate change.	The value of economic output that is produced per unit of gross available energy. The gross available energy represents the quantity of energy products necessary to satisfy all demand of entities in the geographical area under consideration (Euro per kilogram of oil equivalent).	Eurostat series sdg_07_30	2018
GHG absorption by ecosystems	Forest areas and land in general provide important ecosystem services, particularly in relation to CO2 capture. This is important for mitigation and adaptation to climate change.	Greenhouse gas absorption (negative of emission) by the land use, land use change, and forestry (LULUCF) source sector, as a share of the total land cover.	Eurostat series env_air_gge(negative of) and lan_lcv_ovw	2018
Share of insured losses (from weather and climate related events)	Insurance is a tool to transfer the losses due to climate related extreme events to a party which is more prepared to absorb them. It is part of adaptation.	Share of insured losses of weather or climate related extreme events over the period 1980-2017 (% of total losses).	European Environmental Agency (IND-182-en)	2017

Table 4: Variables on digital capacities

Note: The vulnerability indicators are such that the higher the more vulnerable. The resilience capacity indicators are such that the higher the more resilient

Variable name	Motivation	Full definition	Source	Year
CAPACITIES				
Digital economy	Countries with a better digital performance have skills and resources that enable them to manage the digital transition better: for example, digital skills and the use of internet can help to adapt to new market conditions, and to realign the economy.	Composite indicator that summarises relevant indicators on Europe's digital performance including: deployment of broadband infrastructure and its quality; digital skills; use of internet services; digitisation public services; research and Development ICT; integration of digital technology by businesses.	Digital Economy and Society Index (DESI)	Index of 2020, using reference year 2019
E-government	Countries that are able to offer digital services to their citizens are better equipped to manage the digital transition.	Composite indicator that aggregates information on e-Government Users (20%), Pre-filled Forms (20%), Online Service Completion (20%), Digital public services for businesses (20%), and Open Data (20%).	Digital Economy and Society Index (DESI) sub-component desi_5a_egov	Index of 2020, using reference year 2019
Digital skills	Countries where people have better digital skills are more able to use online facilities for working, health, and leisure purposes. This is a crucial capacity for managing the digital transition.	Human capital component of DESI, including both basic skills (daily use) and high level skills (IT skilled people needed for labour market).	Digital Economy and Society Index (DESI) sub-component 2	Index of 2020, using reference year 2019
Teleworking capacity	High starting prevalence of teleworking facilitates the emergence of new work practices in general, and enables better coping with the lockdown and physical distancing in particular.	Employed persons working from home (sometimes or usually) as a percentage of the total employment, age group 20-64 (%).	Eurostat series lfsa_ehomp	2019
E-Health	Given the restrictions of personal movements and physical distancing, it is becoming more essential to have online access to selected healthcare services. It also represents an important general digital resilience capacity.	Percentage of people who used health and care services provided online without having to go to the hospital or a doctor's surgery (for example, by getting a prescription or a consultation online) at least once in the last year.	Eurobarometer 460 Question QD16	2017

ANNEX 2: CORRELATION ANALYSIS

Table 5: Correlation matrix for the indicators on raw material supply security.

Note: Correlation is computed using the raw data in the latest available year. In the dashboard, scores are applied to the negative of vulnerability indicators, as their higher value indicates higher vulnerability and hence a worse situation.

	Domestic material consumption per capita	Direct and indirect material consumption per capita	Basic metal ores, domestic consumption per capita	Non-metallic minerals for construction, domestic consumption per capita	Resource intensity	Basic metal ores, import dependence	Non-metallic minerals for construction, import dependence	Supplier concentration in basic metal ores	Economic importance of basic metal ores	Domestic CRM extraction	Intra EU trade in recyclable raw materials	Intra EU trade in basic metals	Intra EU trade in construction related non-metallic minerals	Importance of efficient use of resources	Recycling rate of e-waste	Circular material use rate	Patents in recycling and secondary raw materials	Product redesign practices for efficient use or recycling	Business R&D expenditures in material sectors	Resource efficiency, rate of change	Supplier diversification for basic metals, rate of change
Domestic material consumption per capita	1.00	0.13	0.52	0.87	0.39	-0.37	-0.02	0.59	-0.05	0.06	-0.06	-0.07	-0.23	-0.39	0.25	-0.44	-0.13	-0.10	0.20	-0.37	-0.53
Direct and indirect material consumption per capita	0.13	1.00	0.02	0.09	-0.33	0.06	0.70	0.31	-0.24	-0.13	0.40	0.21	0.22	0.17	-0.05	-0.05	-0.15	0.41	0.08	0.00	-0.30
Basic metal ores, domestic consumption per capita	0.52	0.02	1.00	0.28	0.26	-0.80	-0.11	0.30	0.03	0.05	-0.15	0.10	-0.29	-0.03	0.27	-0.26	-0.01	-0.05	0.40	-0.14	-0.25
Non-metallic minerals for construction, domestic consumption per capita	0.87	0.09	0.28	1.00	0.43	-0.27	-0.19	0.51	-0.05	0.00	-0.09	-0.11	-0.24	-0.34	0.13	-0.54	-0.19	-0.20	0.11	-0.27	-0.52
Resource intensity	0.39	-0.33	0.26	0.43	1.00	-0.26	-0.32	-0.04	0.08	0.13	-0.04	0.11	-0.03	-0.22	0.17	-0.39	-0.17	-0.55	-0.40	-0.30	-0.10
Basic metal ores, import dependence	-0.37	0.06	-0.80	-0.27	-0.26	1.00	0.31	-0.12	0.21	-0.17	0.37	0.19	0.50	-0.23	-0.19	0.44	0.02	0.02	-0.19	-0.09	0.06
Non-metallic minerals for construction, import dependence	-0.02	0.70	-0.11	-0.19	-0.32	0.31	1.00	0.17	-0.25	-0.14	0.57	0.28	0.43	-0.07	-0.04	0.44	-0.10	0.47	0.08	-0.14	-0.01
Supplier concentration in basic metal ores	0.59	0.31	0.30	0.51	-0.04	-0.12	0.17	1.00	-0.41	-0.23	-0.10	-0.19	0.05	-0.28	0.33	-0.36	-0.31	0.03	0.03	-0.18	-0.64
Economic importance of basic metal ores	-0.05	-0.24	0.03	-0.05	0.08	0.21	-0.25	-0.41	1.00	0.31	0.32	0.60	0.15	-0.16	0.00	0.11	0.31	-0.40	0.18	-0.09	0.11
Domestic CRM extraction	0.06	-0.13	0.05	0.00	0.13	-0.17	-0.14	-0.23	0.31	1.00	0.00	0.06	-0.17	-0.17	-0.14	0.04	0.69	-0.28	-0.04	-0.03	-0.05
Intra EU trade in recyclable raw materials	-0.06	0.40	-0.15	-0.09	-0.04	0.37	0.57	-0.10	0.32	0.00	1.00	0.82	0.69	-0.15	-0.07	0.25	-0.12	-0.03	0.06	-0.05	-0.01
Intra EU trade in basic metals	-0.07	0.21	0.10	-0.11	0.11	0.19	0.28	-0.19	0.60	0.06	0.82	1.00	0.65	-0.14	0.01	0.18	-0.10	-0.29	0.13	-0.05	-0.04
Intra EU trade in construction related non-metallic minerals	-0.23	0.22	-0.29	-0.24	-0.03	0.50	0.43	0.05	0.15	-0.17	0.69	0.65	1.00	-0.20	0.07	0.14	-0.31	-0.12	-0.17	-0.20	-0.06
Importance of efficient use of resources	-0.39	0.17	-0.03	-0.34	-0.22	-0.23	-0.07	-0.28	-0.16	-0.17	-0.15	-0.14	-0.20	1.00	-0.18	-0.09	-0.17	0.33	-0.03	0.35	0.38
Recycling rate of e-waste	0.25	-0.05	0.27	0.13	0.17	-0.19	-0.04	0.33	0.00	-0.14	-0.07	0.01	0.07	-0.18	1.00	-0.21	-0.26	-0.24	-0.06	0.06	-0.06
Circular material use rate	-0.44	-0.05	-0.26	-0.54	-0.39	0.44	0.44	-0.36	0.11	0.04	0.25	0.18	0.14	-0.09	-0.21	1.00	0.35	0.14	0.28	0.00	0.33
Patents in recycling and secondary raw materials	-0.13	-0.15	-0.01	-0.19	-0.17	0.02	-0.10	-0.31	0.31	0.69	-0.12	-0.10	-0.31	-0.17	-0.26	0.35	1.00	-0.01	0.21	0.01	0.08
Product redesign practices for efficient use or recycling	-0.10	0.41	-0.05	-0.20	-0.55	0.02	0.47	0.03	-0.40	-0.28	-0.03	-0.29	-0.12	0.33	-0.24	0.14	-0.01	1.00	0.26	0.14	0.32
Business R&D expenditures in material sectors	0.20	0.08	0.40	0.11	-0.40	-0.19	0.08	0.03	0.18	-0.04	0.06	0.13	-0.17	-0.03	-0.06	0.28	0.21	0.26	1.00	-0.15	-0.21
Resource efficiency, rate of change	-0.37	0.00	-0.14	-0.27	-0.30	-0.09	-0.14	-0.18	-0.09	-0.03	-0.05	-0.05	-0.20	0.35	0.06	0.00	0.01	0.14	-0.15	1.00	0.35
Supplier diversification for basic metals, rate of change	-0.53	-0.30	-0.25	-0.52	-0.10	0.06	-0.01	-0.64	0.11	-0.05	-0.01	-0.04	-0.06	0.38	-0.06	0.33	0.08	0.32	-0.21	0.35	1.00

Table 6: Correlation matrix for the indicators on green aspects.

Note: Correlation is computed using the raw data in the latest available year. In the dashboard, scores are applied to the negative of vulnerability indicators, as their higher value indicates higher vulnerability and hence a worse situation.

	Biodiversity loss (low common farmland bird index)	Water exploitation index	Soil erosion by water	Years of life lost attributable to air pollution (PM 2.5)	GHG emissions per capita	Days with need of cooling (change)	Fatalities due to flood events	Fatalities due to storm events	Fatalities due to extreme temperature events	Fatalities due to wildfire events	Economic losses from weather and climate related events	Frequency of flood events	Frequency of storm events	Frequency of extreme temperature events	Frequency of wildfire events	Population living in low elevation coastal zones	Ability to keep home adequately warm	Employment in energy intensive sectors	Commitment to UN initiative	Conservation status of habitat and species	Public expenditures on environmental protection (change)	Population covered by the Covenant of Mayors	Citizen involvement	Natura 2000 protected areas	Adaptation policies scoreboard	Environment-related technologies	Energy productivity	GHG absorption by ecosystems	Share of insured losses (from weather and climate related events)
Biodiversity loss (low common farmland bird index)	1.00	-0.49	-0.06	-0.16	0.07	-0.07	-0.01	0.10	0.25	-0.39	0.08	-0.08	0.20	0.25	-0.21	0.10	-0.26	0.07	0.19	-0.46	0.09	-0.13	0.11	-0.29	0.09	0.27	-0.27	0.07	0.35
Water exploitation index	-0.49	1.00	0.24	0.02	0.05	0.19	0.51	0.26	-0.01	0.75	-0.02	0.45	0.18	0.17	0.62	-0.04	0.39	-0.20	-0.17	0.34	0.31	0.28	0.07	0.21	-0.25	-0.27	-0.01	0.00	-0.23
Soil erosion by water	-0.06	0.24	1.00	0.17	-0.27	0.37	0.35	0.39	-0.09	0.15	0.24	0.54	0.09	0.07	0.19	-0.26	0.12	0.12	-0.14	0.04	0.18	0.13	0.03	0.38	-0.22	-0.19	0.04	0.26	-0.32
Years of life lost attributable to air pollution (PM 2.5)	-0.16	0.02	0.17	1.00	-0.31	0.37	0.15	-0.05	-0.09	0.21	-0.25	0.39	-0.19	0.37	-0.06	-0.26	0.44	0.40	-0.38	0.03	0.20	-0.05	-0.67	0.53	-0.39	-0.52	-0.51	0.30	-0.61
GHG emissions per capita	0.07	0.05	-0.27	-0.31	1.00	-0.19	-0.33	-0.22	-0.13	-0.12	0.28	-0.40	-0.10	-0.12	-0.33	0.08	-0.28	-0.20	0.07	0.07	-0.15	-0.34	0.11	-0.01	-0.29	0.17	0.28	-0.17	0.49
Days with need of cooling (change)	-0.07	0.19	0.37	0.37	-0.19	1.00	0.10	0.16	0.14	0.10	-0.13	0.41	0.05	0.34	-0.27	-0.17	0.04	0.05	-0.11	0.17	0.01	-0.25	0.04	0.21	-0.45	-0.18	-0.31	0.06	-0.05
Fatalities due to flood events	-0.01	0.51	0.35	0.15	-0.33	0.10	1.00	0.77	0.59	0.34	0.12	0.80	0.68	0.46	0.60	-0.20	0.30	0.06	0.30	0.05	0.42	0.15	-0.13	0.04	0.12	-0.22	0.02	0.29	-0.15
Fatalities due to storm events	0.10	0.26	0.39	-0.05	-0.22	0.16	0.77	1.00	0.67	0.03	0.27	0.67	0.85	0.64	0.27	-0.09	0.00	-0.01	0.57	-0.12	0.39	0.02	0.02	-0.21	0.22	0.08	0.22	0.33	0.11
Fatalities due to extreme temperature events	0.25	-0.01	-0.09	-0.09	-0.13	0.14	0.59	0.67	1.00	-0.10	0.05	0.38	0.75	0.46	0.12	0.02	-0.08	-0.06	0.53	-0.12	0.18	-0.15	0.06	-0.20	0.14	0.03	0.02	0.03	0.28
Fatalities due to wildfire events	-0.39	0.75	0.15	0.21	-0.12	0.10	0.34	0.03	-0.10	1.00	-0.04	0.10	0.00	-0.11	0.67	-0.04	0.40	-0.19	-0.19	0.14	0.47	0.36	0.09	0.18	-0.02	-0.22	0.01	0.04	-0.28
Economic losses from weather and climate related events	0.08	-0.02	0.24	-0.25	0.28	-0.13	0.12	0.27	0.05	-0.04	1.00	0.10	0.29	-0.13	0.00	-0.07	-0.31	-0.06	0.45	-0.46	0.09	-0.15	0.35	-0.12	0.08	0.59	0.73	-0.22	0.47
Frequency of flood events	-0.08	0.45	0.54	0.39	-0.40	0.41	0.80	0.67	0.38	0.10	0.10	1.00	0.52	0.47	0.38	-0.26	0.31	0.10	0.15	-0.02	0.38	0.22	-0.34	0.31	-0.05	-0.33	-0.04	0.42	-0.31
Frequency of storm events	0.20	0.18	0.09	-0.19	-0.10	0.05	0.68	0.85	0.75	0.00	0.29	0.52	1.00	0.58	0.32	0.11	-0.09	-0.02	0.69	-0.37	0.33	0.04	0.19	-0.25	0.38	0.18	0.27	0.11	0.37
Frequency of extreme temperature events	0.25	0.17	0.07	0.37	-0.12	0.34	0.46	0.64	0.46	-0.11	-0.13	0.47	0.58	1.00	-0.05	-0.07	0.12	0.29	0.18	-0.09	0.29	-0.09	-0.41	-0.07	-0.01	-0.23	-0.29	0.34	-0.08
Frequency of wildfire events	-0.21	0.62	0.19	-0.06	-0.33	-0.27	0.60	0.27	0.12	0.67	0.00	0.38	0.32	-0.05	1.00	-0.05	0.29	-0.17	0.02	-0.16	0.28	0.45	0.20	0.16	0.24	-0.24	0.06	0.18	-0.25
Population living in low elevation coastal zones	0.10	-0.04	-0.26	-0.26	0.08	-0.17	-0.20	-0.09	0.02	-0.04	-0.07	-0.26	0.11	-0.07	-0.05	1.00	-0.15	-0.33	0.06	-0.24	0.09	0.19	0.06	-0.34	0.09	0.26	0.18	-0.63	0.34
Ability to keep home adequately warm	-0.26	0.39	0.12	0.44	-0.28	0.04	0.30	0.00	-0.08	0.40	-0.31	0.31	-0.09	0.12	0.29	-0.15	1.00	-0.22	-0.35	0.17	0.00	0.31	-0.35	0.33	-0.18	-0.49	-0.27	0.26	-0.57
Employment in energy intensive sectors	0.07	-0.20	0.12	0.40	-0.20	0.05	0.06	-0.01	-0.06	-0.19	-0.06	0.10	-0.02	0.29	-0.17	-0.33	-0.22	1.00	-0.06	-0.10	0.08	-0.29	-0.27	0.12	0.13	-0.20	-0.37	0.17	-0.24
Commitment to UN initiative	0.19	-0.17	-0.14	-0.38	0.07	-0.11	0.30	0.57	0.53	-0.19	0.45	0.15	0.69	0.18	0.02	0.06	-0.35	-0.06	1.00	-0.25	0.21	-0.23	0.48	-0.35	0.47	0.63	0.38	0.03	0.54
Conservation status of habitat and species	-0.46	0.34	0.04	0.03	0.07	0.17	0.05	-0.12	-0.12	0.14	-0.46	-0.02	-0.37	-0.09	-0.16	-0.24	0.17	-0.10	-0.25	1.00	0.01	-0.05	-0.18	0.15	-0.26	-0.32	-0.27	0.20	-0.32
Public expenditures on environmental protection (change)	0.09	0.31	0.18	0.20	-0.15	0.01	0.42	0.39	0.18	0.47	0.09	0.38	0.33	0.29	0.28	0.09	0.00	0.08	0.21	0.01	1.00	0.41	-0.07	0.06	0.04	0.09	-0.04	0.24	-0.07
Population covered by the Covenant of Mayors	-0.13	0.28	0.13	-0.05	-0.34	-0.25	0.15	0.02	-0.15	0.36	-0.15	0.22	0.04	-0.09	0.45	0.19	0.31	-0.29	-0.23	-0.05	0.41	1.00	-0.12	-0.07	0.13	-0.13	0.11	-0.04	-0.19
Citizen involvement	0.11	0.07	0.03	-0.67	0.11	0.04	-0.13	0.02	0.06	0.09	0.35	-0.34	0.19	-0.41	0.20	0.06	-0.35	-0.27	0.48	-0.18	-0.07	-0.12	1.00	-0.21	0.31	0.56	0.38	-0.20	0.47
Natura 2000 protected areas	-0.29	0.21	0.38	0.53	-0.01	0.21	0.04	-0.21	-0.20	0.18	-0.12	0.31	-0.25	-0.07	0.16	-0.34	0.33	0.12	-0.35	0.15	0.06	-0.07	-0.21	1.00	-0.44	-0.51	-0.29	0.41	-0.55
Adaptation policies scoreboard	0.09	-0.25	-0.22	-0.39	-0.29	-0.45	0.12	0.22	0.14	-0.02	0.08	-0.05	0.38	-0.01	0.24	0.09	-0.18	0.13	0.47	-0.26	0.04	0.13	0.31	-0.44	1.00	0.37	0.26	-0.08	0.16
Environment-related technologies	0.27	-0.27	-0.19	-0.52	0.17	-0.18	-0.22	0.08	0.03	-0.22	0.59	-0.33	0.18	-0.23	-0.24	0.26	-0.49	-0.20	0.63	-0.32	0.09	-0.13	0.56	-0.51	0.37	1.00	0.50	-0.38	0.68
Energy productivity	-0.27	-0.01	0.04	-0.51	0.28	-0.31	0.02	0.22	0.02	0.01	0.73	-0.04	0.27	-0.29	0.06	0.18	-0.27	-0.37	0.38	-0.27	-0.04	0.11	0.38	-0.29	0.26	0.50	1.00	-0.33	0.53
GHG absorption by ecosystems	0.07	0.00	0.26	0.30	-0.17	0.06	0.29	0.33	0.03	0.04	-0.22	0.42	0.11	0.34	0.18	-0.63	0.26	0.17	0.03	0.20	0.24	-0.04	-0.20	0.41	-0.08	-0.38	-0.33	1.00	-0.52
Share of insured losses (from weather and climate related events)	0.35	-0.23	-0.32	-0.61	0.49	-0.05	-0.15	0.11	0.28	-0.28	0.47	-0.31	0.37	-0.08	-0.25	0.34	-0.57	-0.24	0.54	-0.32	-0.07	-0.19	0.47	-0.55	0.16	0.68	0.53	-0.52	1.00

Table 7: Correlation matrix for the indicators on digital aspects.
Note: Correlation is computed using the raw data in the latest available year.

	Digital economy	E-government	Digital skills	Teleworking capacity	E-Health
Digital economy	1.00	0.77	0.91	0.81	0.61
E-government	0.77	1.00	0.60	0.57	0.57
Digital skills	0.91	0.60	1.00	0.81	0.62
Teleworking capacity	0.81	0.57	0.81	1.00	0.55
E-Health	0.61	0.57	0.62	0.55	1.00