

Addendum A: WEF Nexus Index - Indicator selection table

No.	Sector	Indicator	Definition ¹	Source	Units	Data availability	SDG Indicator? (Y/N)	Reason/motivation for inclusion/exclusion
1	Water (SDG 6)	The percentage of people using at least basic drinking water services	This indicator encompasses both people using basic water services as well as those using safely managed water services. Basic drinking water services are defined as drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip. Improved water sources include piped water, boreholes or tube wells, protected dug wells, protected springs, and packaged or delivered water (FAO.org 2018, Accessed 2019-03-01).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk Source: World Bank: http://data.worldbank.org/indicator/SH.H2O.BASW.ZS . Original source: WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply, Sanitation and Hygiene (washdata.org). Accessed 2019-03-01	%	2015 Very good data coverage. The indicator is utilised in SDG Index for SDG 6	No, but 6.1.1 (Proportion of population using safely managed drinking water services) and 6.3.2 are SDG indices. It is FAO indicator I_4.1	Yes; very good data, and the indicator is relevant to SDG 6. Alternative to official indicator 6.1.1 since it has better data coverage for many nations
2	Water (SDG 6)	People using safely managed drinking water services	The percentage of the population using drinking water from an improved water source which is located on premises, available when needed and free from faecal and priority chemical contamination (FAO.org 2018, Accessed 2019-03-01)	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk Source: World Bank: http://data.worldbank.org/indicator/SH.H2O.SMDW.ZS . Original source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP) (http://www.wssinfo.org/). Accessed 2019-03-01	%	2015 Data coverage relatively sparse	Yes, 6.1.1. It is FAO indicator I_4.2	No; rather use "The percentage of people using at least basic drinking water services" as equivalent indicator since it has better data coverage
3	Water (SDG 6)	Percentage of people using at least basic sanitation services.	The percentage of people using at least basic sanitation services, that is, improved sanitation facilities that are not shared with other households. This indicator encompasses both people using basic sanitation services as well as those using safely managed sanitation services. Improved sanitation facilities include flush/pour flush to piped sewer systems, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs (FAO.org 2018, Accessed 2019-03-01).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk Source: World Development Indicators: World Bank: http://data.worldbank.org/indicator/SH.STA.BASS.ZS . Original source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP) (http://www.wssinfo.org/). Accessed 2019-03-01	%	2015 Very good data coverage. The indicator is utilised in SDG Index for SDG 6	No, but 6.2.1 and 6.3.1 are SDG indices. It is FAO indicator I_4.3	No; very good data, and the indicator is relevant to SDG 6, but "Percentage of people using safely managed sanitation services" is an official SDG indicator, 6.2.1, and FAO lists the exact same data for the two.
4	Water (SDG 6)	Percentage of people using safely managed sanitation services.	The percentage of the population using improved sanitation facilities which are not shared with other households and where excreta are safely disposed in situ or transported and treated off-site (FAO.org 2018, Accessed 2019-03-01).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk Source: World Development Indicators: World Bank: http://data.worldbank.org/indicator/SH.STA.SMSS.ZS . Original source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP)	%	2015 Very good data coverage. Data is identical to "Percentage of people using at least basic sanitation services."	Yes, 6.2.1 and it is FAO indicator I_4.4	Yes; very good data coverage and indicator is an official SDG indicator

¹ Definitions from websites listed in "Source" column of table

				(http://www.wssinfo.org/). Accessed 2019-03-01				
5	Water (SDG 6)	Infrastructure leakage index	Performance indicator for real losses, which measures the ratio of current annual real losses to system-specific unavoidable annual real losses. It is the ideal indicator for making international comparison (Winarni, 2009). The Infrastructure Leakage Index (ILI) is a performance indicator that is used to indicate the level of Real Losses (i.e. Physical leakage) in a water distribution system (Mckenzie et al. 2012). The ILI is a non-dimensional indicator and ranges from 1 to over 100 and could be considered as an alternative to the Non-Revenue Water value. An ILI value of 1 equates to the “world’s best practice” and indicates that the level of physical leakage in a system is as low as it can be, while a value of ten would indicate that the physical leakage is ten times larger than the lowest value.		-	On an international level uniformity in measuring, interpreting or reporting of the ILI does not exist.	No	No, data not comparable on an international level
6	Water (SDG 6)	Non-Revenue Water	A measure of the municipal efficiency of water management, Non-Revenue Water is the sum of unbilled authorised water, commercial losses and real or physical losses.		Million m ³ /annum	On an international level uniformity in measuring, interpreting or reporting of the non-revenue water does not exist.	No	No, data not comparable on an international level
7	Water (SDG 6)	Annual freshwater withdrawals, total (% of internal resources)	Annual freshwater withdrawals refer to total water withdrawals, not counting evaporation losses from storage basins. Withdrawals also include water from desalination plants in countries where they are a significant source. Withdrawals can exceed 100 percent of total renewable resources where extraction from nonrenewable aquifers or desalination plants is considerable or where there is significant water reuse. Withdrawals for agriculture and industry are total withdrawals for irrigation and livestock production and for direct industrial use (including withdrawals for cooling thermoelectric plants). Withdrawals for domestic uses include drinking water, municipal use or supply, and use for public services, commercial establishments, and homes (<i>World Bank 2019-03-01</i>)	https://data.worldbank.org/indicator/ER.H2O.FWTL.ZS?view=chart Source: Food and Agriculture Organization, AQUASTAT data	%	2002-2014 Limited data coverage. Indicator utilised in SDG Index for SDG 6. Need to use the most recent values from the database	Yes, 6.4.2 C060402	Yes , this is an official SDG indicator, and utilising the most recent values from 2002-2014 a good coverage of data is obtained. This dataset will however require Winsorization in order to remove the distorting effect of outliers, and to avoid too large a space in the dataset. Data could be truncated at 200%, which represents double the available fresh water resources of the country.
8	Water (SDG 6)	Water withdrawal in the agriculture sector	Annual quantity of self-supplied water withdrawn for irrigation, livestock and aquaculture purposes. It can include water from primary renewable and secondary freshwater resources, as well as water from over-abstraction of renewable groundwater or withdrawal from fossil groundwater, direct use of agricultural drainage water, direct use of (treated) wastewater, and desalinated water. Water for the dairy and meat industries and industrial processing of harvested	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1965-2017 with many missing data per year. Most data are available for 2000 for 68 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.

			agricultural products is included under industrial water withdrawal (FAO 2019-05-25)					
9	Water (SDG 6)	Water withdrawal in the industry sector	Annual quantity of self-supplied water withdrawn for industrial uses. It can include water from primary renewable and secondary freshwater resources, as well as water from over-abstraction of renewable groundwater or withdrawal from fossil groundwater, direct use of agricultural drainage water, direct use of (treated) wastewater, and desalinated water. This sector refers to self-supplied industries not connected to the public distribution network. The ratio between net consumption and withdrawal is estimated at less than 5%. It includes water for the cooling of thermoelectric and nuclear power plants, but it does not include hydropower. Water withdrawn by industries that are connected to the public supply network is generally included in municipal water withdrawal. (FAO 2019-05-25)	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1965-2017 with many missing data per year. Most data are available for 2000 for 93 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
10	Water (SDG 6)	Water withdrawal in the industry sector	Annual quantity of water withdrawn primarily for the direct use by the population. It can include water from primary renewable and secondary freshwater resources, as well as water from over-abstraction of renewable groundwater or withdrawal from fossil groundwater, direct use of agricultural drainage water, direct use of (treated) wastewater, and desalinated water. It is usually computed as the total water withdrawn by the public distribution network. It can include that part of the industries and urban agriculture, which is connected to the municipal network. The ratio between the net consumption and the water withdrawn can vary from 5 to 15% in urban areas and from 10 to 50% in rural areas. (FAO 2019-05-25)	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1965-2017 with many missing data per year. Most data are available for 2000 for 91 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
11	Water (SDG 6)	Fresh groundwater withdrawal (primary and secondary) - Total	Annual gross amount of water extracted from aquifers. It can include withdrawal of renewable primary and secondary groundwater, as well as water from over-abstraction of renewable groundwater or withdrawal from fossil groundwater. (FAO 2019-05-25)	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1965-2017 with many missing data per year. Most data are available for 2000 for 91 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
12	Water (SDG 6)	Desalinated water produced	Water produced annually by desalination of brackish or salt water. It is estimated annually on the basis of the total capacity of water desalination installations. (FAO 2019-05-25)	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1980-2015 with many missing data per year. Most data are available for 2000 for 49 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
13	Water (SDG 6)	Treated municipal water	Treated wastewater (primary, secondary and tertiary) annually produced by municipal wastewater treatment facilities in the country. Primary treatment: municipal wastewater effectively treated by a physical and/or chemical process involving	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1967-2017 with many missing data per year. Most data are	No	No, although data is available for many countries, the data is missing for many monitoring years

			<p>settlement of suspended solids, or other process in which the BOD5 of the incoming wastewater is reduced by at least 20% and the total suspended solids of the incoming wastewater are reduced by at least 50% before discharge. Treatment processes can include: sedimentation tank, septic tank, skimming, chemical enhanced primary treatment.</p> <p>Secondary treatment:municipal wastewater effectively treated by a process generally involving biological treatment with a secondary settlement or other process, resulting in a BOD removal of at least 70% and a COD removal of at least 75% before discharge.</p> <p>Treatment processes can include: aerated lagoon, activated sludge, up-flow anaerobic sludge blanket, trickling filters, rotating biological contactors, oxidation ditch, settling basin digester. For the purpose of this database natural biological treatment processes are also considered under secondary treatment as the constituents of the effluents from this type of treatment is similar to the conventional secondary treatment. Natural biological treatment refers to the process other than conventional wastewater treatment (primary, secondary, tertiary). This treatment makes use of natural bio-chemical processes to treat wastewater and can include: waste stabilization pond, constructed wetlands, overland treatment, nutrient film techniques, soil aquifer treatment, high-rate algal pond, floating aquatic macrophyte systems.</p> <p>Tertiary treatment:municipal wastewater effectively treated by a process in addition to secondary treatment of nitrogen and/or phosphorous and/or any other specific pollutant affecting the quality or a specific use of water: microbiological pollution, colour, etc. This treatment is meant to remove at least 95% for BOD and 85% for COD and/or a nitrogen removal of at least 70% and/or a phosphorus removal of at least 80% and/or a microbiological removal. Treatment process can include: membrane filtration (micro-; nano-; ultra- and reverse osmosis), infiltration / percolation, activated carbon, disinfection (chlorination, ozone, UV). ..(FAO 2019-05-25)</p>			available for 2012 for 25 countries.		resulting in an incomplete dataset.
14	Water (SDG 6)	Direct use of treatment municipal water	Treated municipal wastewater (primary, secondary, tertiary effluents) directly used, i.e. with no or little prior dilution with freshwater during most of the year.	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1967-2013 with many missing data per year. Most data are available for 2000 for 15 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
15	Water (SDG 6)	Environmental flow requirements	The quantity and timing of freshwater flows and levels necessary to sustain aquatic ecosystems which, in turn, support human cultures, economies, sustainable	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	10 ⁹ m ³ /year	Data available from 1962-2017 with many missing data per year.	No	Yes , it is important that water's contribution required for sustaining the environment is taken

			livelihoods, and wellbeing” (Adapted from Arthington, A.H., et al. 2018).			Most data are available for 2017 for 154 countries.		into account. Good correlation with renewable internal fresh water resources (0.58)
16	Water (SDG 6)	Percentage of area equipped for irrigation by surface water	Area equipped for irrigation irrigated by surface water as percentage of the total area equipped for irrigation	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	%	Data available from 1962-2014 with many missing data per year. Most data are available for 1994 for 19 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
17	Water (SDG 6)	Percentage of area equipped for irrigation by ground water	Equipped for irrigation area irrigated by groundwater as percentage of the total equipped for irrigation area.	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	%	Data available from 1962-2014 with many missing data per year. Most data are available for 1994 for 17 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
18	Water (SDG 6)	Percentage of total grain production irrigated	Percent of the total grain production of the country (rainfed and irrigated) that is irrigated in a given year, expressed in percentage.	http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en Source: Food and Agriculture Organization, AQUASTAT data	%	Data available from 1984-1995 with many missing data per year. Most data are available for 1994 for 13 countries.	No	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
19	Water (SDG 6)	Renewable internal freshwater resources per capita (cubic meters)	Renewable internal freshwater resources flows refer to internal renewable resources (internal river flows and groundwater from rainfall) in the country. Renewable internal freshwater resources per capita are calculated using the World Bank's population estimates (<i>World Bank 2019-03-01</i>).	https://data.worldbank.org/indicator/ER.H2O.INTR.PC?view=chart Source: Food and Agriculture Organization, AQUASTAT data	m ³ /capita	2014 Very good data coverage	No	Yes , very good data coverage, and the “per capita” unit provides a helpful measure between countries with an indicator of relative scarcity. Good correlation with annual fresh water resources, but not too high to warrant exclusion (0.78)
20	Water (SDG 6)	Renewable internal freshwater resources, total (billion cubic meters)	Renewable internal freshwater resources flows refer to internal renewable resources (internal river flows and groundwater from rainfall) in the country (World Bank 2019-03-04).	https://data.worldbank.org/indicator/ER.H2O.INTR.K3?view=chart Source: Food and Agriculture Organization, AQUASTAT data	Billion m ³	2014 Very good data coverage	No	No, this is the same data as the “Renewable internal freshwater resources per capita (cubic meters)” but as a quantum instead of per capita
21	Water (SDG 6)	Hydropower electricity capacity (MW)	Hydropower and renewable hydropower	https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	MW	Data available from 2000-2018 with minimal missing data per year. Most data are available for 2018 for 159 countries.	No	No, this data is included in the renewable energy consumption and output indicators

22	Water (SDG 6)	Hydropower electricity generation (GWh)	Hydropower and renewable hydropower	https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	GWh	Data available from 2000-2016 with minimal missing data per year. Most data are available for 2016 for 159 countries.	No	No, this data is included in the renewable energy consumption and output indicators
23	Water (SDG 6)	Average precipitation in depth (mm per year)	Average precipitation is the long-term average in depth (over space and time) of annual precipitation in the country. Precipitation is defined as any kind of water that falls from clouds as a liquid or a solid (<i>World Bank 2019-03-04</i>).	https://data.worldbank.org/indicator/AG.LND.PRPC.MM Source: Food and Agriculture Organization, electronic files and website	mm/year	2014 Very good data coverage	No	Yes ; this data is widely available and provides a good indication of available fresh water. This indicator directly influences food production and energy generation. Good correlation with annual freshwater withdrawals
24	Water (SDG 6)	Proportion of wastewater safely treated	Percentage of wastewater generated by households (sewage and faecal sludge) and economic activities (based on ISIC categories) that is safely treated (UN Water, 2016).	http://www.fao.org/nr/water/aquastat/data/query/results.html Source: FAO. 2016. AQUASTAT Main Database, Food and Agriculture Organization of the United Nations (FAO). Website accessed on [13/03/2019 8:28]	10 ⁹ m ³ /year	Data available from 1993-2017 for 93 countries with missing data entries for most years	Yes; indicator 6.3.1	No, although data is available for many countries, the data is missing for many monitoring years resulting in an incomplete dataset.
25	Water (SDG 6)	Proportion of bodies of water with good ambient water quality	Percentage of water bodies (area) in a country with good ambient water quality. "Good" indicates an ambient water quality that does not damage ecosystem function and human health according to core ambient water quality parameters. Overall water quality is estimated based on a core set of five parameters that inform on major water quality impairments present in many parts of the world: electric conductivity/total dissolved solids; percentage dissolved oxygen; dissolved inorganic nitrogen/total nitrogen; dissolved inorganic phosphorus/total phosphorus; and faecal coliform/ <i>Escherichia coli</i> bacteria (UNWater, 2016).	UNEP GEMStat		Initial baseline data collected in 2017 for 48 countries. Data is not accessible yet	Yes; indicator 6.3.2	No, only baseline data has been collected for 48 countries. The baseline data is not accessible and cannot be used.
26	Water (SDG 6)	Change in water-use efficiency over time	Output from a given economic activity (based on ISIC categories), per volume of net water withdrawn by the economic activity. This indicator includes water use by all economic activities, focusing on agriculture (excluding the portion generated by rain-fed agriculture), manufacturing, electricity, and water collection, treatment and supply (looking at distribution efficiency and capturing network leakages). By assessing changes over time, the sectoral values can be aggregated into one (UNWater, 2016).	http://www.fao.org/nr/water/aquastat/data/query/results.html	USD/m ³	Data can be calculated from water used per sector and economic contribution, but data specific for this indicator is not available.	Yes; indicator 6.4.1	No; this indicator is calculated per economic sector in a country and not as one value per country.
27	Water (SDG 6)	Degree of integrated water resources	The degree to which IWRM is implemented, by assessing the four components of policies, institutions, management tools and financing. It takes into account	http://iwrmdataportal.unepdhi.org/data/overview.html	%	Data is available for 2017 for 175 countries.	Yes; indicator 6.5.1	Yes ; IWRM implementation provides a good indication of

		management implementation (0-100)	the various users and uses of water, with the aim of promoting positive social, economic and environmental impacts at all levels, including the transboundary level, where appropriate (UNWater, 2016).					water governance, and has a strong correlation with the implementation of basic drinking water and sanitation facilities.
28	Water (SDG 6)	Proportion of transboundary basin area with an operational arrangement for water cooperation	Percentage of transboundary basin area within a country that has an operational agreement or other arrangement for water cooperation. For the purpose of the indicator, "basin area" is defined for surface waters as the extent of the catchment, and for groundwater as the extent of the aquifer. An "arrangement for water cooperation" is a bilateral or multilateral treaty, convention, agreement or other formal arrangement among riparian countries that provides a framework for cooperation on transboundary water management. The criteria for the arrangement to be considered "operational" are based on key aspects of substantive cooperation in water management, such as the existence of institutional mechanisms, regular communication among riparian countries, joint or coordinated management plans or objectives, as well as a regular exchange of data and information (UNWater, 2016).	http://geftwap.org/data-portal	%	Data is not included in the National Statistical Systems yet.	Yes; indicator 6.5.2	No; there is no usable data available yet, but this indicator will play an important role in terms of catchment management.
29	Water (SDG 6)	Change in the extent of water-related ecosystems over time	Changes over time in (1) the spatial extent of water-related ecosystems (wetlands, forests and drylands); (2) the quantity of water in ecosystems (rivers, lakes and groundwater); and (3) the resulting health of ecosystems. In addition, indicator 6.3.2 on ambient water quality and indicator 6.4.2 on environmental water requirements are critically important for understanding ecosystems and need to be factored into the assessment of indicator 6.6.1 (UNWater, 2016).	Not available yet	-	Data not available or not easily accessible.	Yes; indicator 6.6.1	No, insufficient data at this time.
30	Water (SDG 6)	Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan	Amount and percentage of ODA that is included in a government coordinated spending plan, whether: (1) on treasury or (2) on budget. ODA flows are official financing with the main objective of promoting economic development and welfare of developing countries; they are concessional in character with a grant element of at least 25%. By convention, ODA flows comprise contributions from donor government agencies, at all levels, to developing countries, either bilaterally or through multilateral institutions. A government coordinated spending plan is defined as a financing plan/budget for water and sanitation projects, clearly assessing the available sources of finance and strategies for financing future needs (UNWater, 2016).	https://datacatalog.worldbank.org/ Source: The World Bank	US\$ per year	Data available from 2002-2011 for 59 countries	Yes; indicator 6.a.1	No; data is specific to developing countries and only covers 59 countries which is inefficient for the purpose of developing the WEF nexus index.
31	Water (SDG 6)	Proportion of local administrative units with established and operational	Percentage of local administrative units within a country with established and operational policies and procedures for participation of local communities in water and sanitation management. Local	Not available	%	None	Yes; indicator 6.b.1	No; there is no usable data available yet.

		policies and procedures for participation of local communities in water and sanitation management	administrative units refer to subdistricts, municipalities, communes or other local community level units covering both urban and rural areas to be defined by the government. Policies and procedures for participation of local communities in water and sanitation management define a mechanism by which individuals and communities can meaningfully contribute to decisions and directions on water and sanitation management (UNWater, 2016).					
32	Water (SDG 6)	Average evapotranspiration in volume (mm per year)	Important for water management policies in arid countries. Would affect water allocation	http://data.un.org/Data.aspx?d=ENV&=variableID%3A7 Source: United Nations Statistics Division	Million m ³ /annum	1990-2015 Fair coverage Data available for approximately 64 countries	No	No; data is only available for 64 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
33	Water (SDG 6)	Dam storage capacity	Water storage capacity as a proxy for ability to manage Rainfall variability between seasons. Underscores the importance of a basic platform of hydraulic infrastructure, but insensitive application may encourage 'hydraulic mission' and heavy engineering at the expense of other solutions	http://www.fao.org/nr/water/aquastat/data/query/index.html Source: FAO. 2016. AQUASTAT Main Database, Food and Agriculture Organization of the United Nations (FAO). Website accessed on [13/03/2019 8:28]	km ³	Data available from 1990-2017 for 130 countries, with missing data for some years.	No	No; although there is data per country available, it is fragmented. Also, it is uncertain whether dam storage is positive or negative, since there is a conflict between system flows and storage
34	Water (SDG 6)	Virtual water footprint	Many potential policy applications and implications, e.g. could be used to focus attention on the potential for virtual water trade to mitigate against localised water scarcity, but thinking is relatively young and virtual water footprint data needs careful interpretation	Mekonnen, M.M. and Hoekstra, A.Y. (2010) The green, blue and grey water footprint of crops and derived crop products, Value of Water Research Report Series No. 47, UNESCO-IHE, Delft, the Netherlands. http://www.waterfootprint.org/Reports/Report47-WaterFootprintCrops-Vol1.pdf Source: Water Footprint Network	ton of crop or derived crop product	1996-2005 (collated data)	No	No; data is available, but it has been collated into a single dataset instead of data per country.
35	Water (SDG 6)	Total agricultural water managed area	Sum of total area equipped for irrigation and areas with other forms of agricultural water management (non-equipped flood recession cropping area and non-equipped cultivated wetlands and inland valley bottoms) (FAO, 2019-03-13)	http://www.fao.org/nr/water/aquastat/data/query/index.html Source: FAO. 2016. AQUASTAT Main Database, Food and Agriculture Organization of the United Nations (FAO). Website accessed on [13/03/2019 8:28]	1000 ha	Data available from 1988-2017 for 52 countries, with missing data for some years.	No	No; data is only available for 52 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
36	Water (SDG 6)	Population affected by water related diseases	Three types of water-related diseases exist: (i) water-borne diseases are those diseases that arise from infected water and are transmitted when the water is used for drinking or cooking (for example cholera, typhoid); (ii) water-based diseases are those in which water provides the habitat for host organisms of parasites ingested (for example shistosomiasis or bilharzia); (iii) water-related insect vector diseases are those in which insect vectors rely on water as habitat but transmission is not through direct contact with	http://www.fao.org/nr/water/aquastat/data/query/index.html Source: FAO. 2016. AQUASTAT Main Database, Food and Agriculture Organization of the United Nations (FAO). Website accessed on [13/03/2019 8:28]	1000 inhabitants	Data available from 1992-2011 for 32 countries, with most data missing for some years.	No	No; data is only available for 32 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.

			water (for example malaria, onchocerciasis or river blindness, elephantiasis).					
37	Energy (SDG 7)	Access to electricity (% of the population)	Access to electricity is the percentage of population with access to electricity. Electrification data are collected from industry, national surveys and international sources (<i>World Bank 2019-03-04</i>)	https://data.worldbank.org/indicator/E.G.ELC.ACCS.ZS?view=chart Source: World Bank, Sustainable Energy for All (SE4ALL) database from the SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program.	%	2016 Very good data coverage. Indicator utilised in SDG Index for SDG 7	Yes, Indicator 7.1.1 (C070101)	Yes; essential indicator for SDG 7 with good data coverage.
38	Energy (SDG 7)	Renewable energy consumption (% of total final energy consumption)	Renewable energy consumption is the share of renewables energy in total final energy consumption (<i>World Bank 2019-03-04</i>).	https://data.worldbank.org/indicator/E.G.FEC.RNEW.ZS Source: World Bank, Sustainable Energy for All (SE4ALL) database from the SE4ALL Global Tracking Framework led jointly by the World Bank, International Energy Agency, and the Energy Sector Management Assistance Program.	%	2015 Very good data coverage. Indicator utilised in SDG Index for SDG 7	Yes, Indicator 7.2.1 (C070201)	Yes; essential indicator for SDG 7 with good data coverage.
39	Energy (SDG 7)	Renewable electricity output (% of total electricity output)	Renewable electricity is the share of electricity generated by renewable power plants in total electricity generated by all types of plants (<i>World Bank 2019-03-04</i>).	https://data.worldbank.org/indicator/E.G.ELC.RNEW.ZS?view=chart Source: IEA Statistics © OECD/IEA 2018 (http://www.iea.org/stats/index.asp)	%	2015 Very good data coverage	No	Yes; since “Renewable energy consumption” refers to energy, while this indicator considers electricity only. Correlation with Renewable energy consumption is good, but not too high
40	Energy (SDG 7)	Total greenhouse gas emissions (kt of CO ₂ equivalent)	Total greenhouse gas emissions in kt of CO ₂ equivalent are composed of CO ₂ totals excluding short-cycle biomass burning (such as agricultural waste burning and Savannah burning) but including other biomass burning (such as forest fires, post-burn decay, peat fires and decay of drained peatlands), all anthropogenic CH ₄ sources, N ₂ O sources and F-gases (HFCs, PFCs and SF ₆). (<i>World Bank 2019-03-04</i>)	https://data.worldbank.org/indicator/E.N.ATM.GHGT.KT.CE?view=chart Source: European Commission, Joint Research Centre (JRC)/Netherlands Environmental Assessment Agency (PBL). Emission Database for Global Atmospheric Research (EDGAR), EDGARv4.2 FT2012: http://edgar.jrc.ec.europa.eu/	kt of CO ₂ equivalent	2012 Very good data coverage	No	No; since this indicator represents all of the GHGs as CO ₂ equivalent and includes biomass burning, methane, and other non-energy related GHG sources.
41	Energy (SDG 7)	CO ₂ emissions (metric tons per capita)	Carbon dioxide emissions are those stemming 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 (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/E.N.ATM.CO2E.PC Source: Carbon Dioxide Information Analysis Centre, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States. https://data.worldbank.org/indicator/E.N.ATM.CO2E.PC	metric tons per capita	2014 Very good data coverage. Similar indicator utilised in SDG Index for SDG 7	No	Yes; this data provides an indication of fossil fuel-related power generation. The per capita rating takes cognisance of the size of the impact relative to the population
42	Energy (SDG 7)	CO ₂ emissions (kt)	Carbon dioxide emissions are those stemming 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 (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/E.N.ATM.CO2E.KT?view=chart Source: Carbon Dioxide Information Analysis Centre, Environmental Sciences Division, Oak Ridge National Laboratory, Tennessee, United States.	kt	2014 Very good data coverage	No	No; same parameter being measured as CO ₂ emissions (metric tons per capita), except that this is not per capita, but the quantum per country.

43	Energy (SDG 7)	Energy use (kg of oil equivalent per capita)	Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/E.G.USE.PCAP.KG.OE?view=chart Source: IEA Statistics © OECD/IEA 2014 (http://www.iea.org/stats/index.asp)	kg of oil equivalent per capita	2015,2014,2013 Good data coverage, although will need to utilise latest data since very limited data for 2015.	No, but consider including 7.1.2 “Proportion of population with primary reliance on clean fuels and technology”	No; although this is a relevant indicator with readily available data it has a very high correlation (0.94) with electric power consumption per capita, and would therefore constitute ‘double accounting’. It is therefore excluded
44	Energy (SDG 7)	Energy imports, net (% of energy use)	Net energy imports are estimated as energy use less production, both measured in oil equivalents. A negative value indicates that the country is a net exporter. Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/E.G.IMP.CONZS?view=chart Source: IEA Statistics © OECD/IEA 2014 (http://www.iea.org/stats/index.asp)	%	2015,2014,2013 Good data coverage, although will need to utilise latest data since very limited data for 2015.	No	Yes; this indicator provides a helpful indication of national energy security. But this indicator will be truncated at zero to exclude exports, since the primary concern is energy security and the indicator is essentially measuring imports and exports.
45	Energy (SDG 7)	Firms experiencing electrical outages (% of firms)	Percent of firms experiencing electrical outages during the previous fiscal year (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/IC.ELC.OUTG.ZS Source: World Bank, Enterprise Surveys	%	2013-2017 Relatively poor data coverage. Will need to use the latest value	No	No, relatively poor data coverage.
46	Energy (SDG 7)	Electric power consumption (kWh per capita)	Electric power consumption measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants (<i>World Bank 2019-03-05</i>).	https://data.worldbank.org/indicator/E.G.USE.ELEC.KH.PC?view=chart Source: IEA Statistics © OECD/IEA 2014 (http://www.iea.org/stats/index.asp)	kWh per capita	2014 Very good data coverage	No	Yes; very good data coverage and very relevant, since it provides a helpful indication of a nation’s generation capacity.
47	Energy (SDG 7)	Proportion of population with primary reliance on clean fuels and technology	This is measured as the share of the total population with access to clean fuels and technologies for cooking. Access to clean fuels or technologies such as clean cookstoves reduce exposure to indoor air pollutants, a leading cause of death in low-income households (UN Stats, 2018)	Households that use solid fuels for cooking: http://apps.who.int/gho/data/view/main.VEQSOLIDFUELSTOTV Source: World Health Organization (MICS and DHS)	%	Data available from 1998-2013 for 93 countries, with data missing for some years.	Yes; indicator 7.1.2	No; data is only available for 93 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
48	Energy (SDG 7)	Energy intensity measured in terms of primary energy and GDP	This is measured as the energy intensity of economies (collectively across all sectors). Energy intensity is measured as the quantity of kilowatt-hours produced per 2011 international-\$ of gross domestic product (kWh per 2011 int-\$) (UN Stats, 2018). Total primary energy supply is defined as the sum of production and imports subtracting exports and storage changes.	https://www.iea.org/statistics/?country=WORLD&year=2016&category=Energy%20supply&indicator=TPESbyGDP&mode=map&dataTable=BALANCES Source: International Energy Agency	TPES/GDP	Data available for 2016 for 142 countries, with data missing for some years.	Yes; indicator 7.3.1	No; this indicator is an SDG indicator and data are available for 142 countries, but it has a negative, low correlation with all other indicators associated with availability.
49	Energy (SDG 7)	International financial flows to developing countries in support	The flows covered by the OECD are defined as all official loans, grants and equity investments received by countries on the DAC List of ODA Recipients from foreign governments and multilateral agencies, for the	http://resourceirena.irena.org/gateway/dashboard/?topic=6&subTopic=8 Source: International Renewable Energy Agency	Million USD	Data is available from 2006-2017 for 141 countries	Yes; indicator 7. a.1	No; although this indicator is an SDG indicator and data are available for 141

		of clean energy research and development and renewable energy production, including in hybrid systems	purpose of clean energy research and development and renewable energy production, including in hybrid systems extracted from the OECD/DAC Creditor Reporting System (CRS). The flows covered by IRENA are defined as all additional loans, grants and equity investments received by developing countries (defined as countries in developing regions, as listed in the UN M49 composition of regions) from all foreign governments, multilateral agencies and additional development finance institutions (including export credits, where available) for the purpose of clean energy research and development and renewable energy production, including in hybrid systems. These additional flows cover the same technologies and other activities (research and development, technical assistance, etc.) as listed above and exclude all flows extracted from the OECD/DAC CRS (UN Stats, 2018)			with data missing for some years.		countries developed/donor and developing countries who have significant domestic expenditure on renewable energy projects are 'penalised' in the calculation of this index. It was therefore decided to exclude this indicator from the composite indicator
50	Energy (SDG 7)	Investments in energy efficiency as a percentage of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services	Not defined yet.	Not available	%	None	Yes; indicator 7. b.1	No; the definition for this indicator is not yet well defined and therefore not well understood yet. There is no data easily available for this indicator.
51	Energy (SDG 7)	Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels	In order to measure fossil fuel subsidies at the national, regional and global level, three sub-indicators are recommended for reporting on this indicator: 1) direct transfer of government funds; 2) induced transfers (price support); and as an optional sub-indicator 3) tax expenditure, other revenue foregone, and underpricing of goods and services. The definitions of the IEA Statistical Manual (IEA, 2005) and the Agreement on Subsidies and Countervailing Measures (ASCM) under the World Trade Organization (WTO) (WTO, 1994) are used to define fossil fuel subsidies. Standardised descriptions from the United Nations Statistical Office's Central Product Classification should be used to classify individual energy products. It is proposed to drop the wording "as a proportion of total national expenditure on fossil fuels" and thus this indicator is effectively "Amount of fossil fuel subsidies per unit of GDP (production and consumption)". (UN Stats, 2018)	Not available	USD/GDP	None; baseline assessment was conducted. Reporting on induced transfers started in 2018; reporting on data for direct transfers and tax revenue will take place in 2020.	Yes; indicator 12.c.1	No; no data readily available

52	Food (SDG 2)	Prevalence of undernourishment ²	The prevalence of undernourishment expresses the probability that a randomly selected individual from the population consumes a number of calories that is insufficient to cover her/his energy requirement for an active and healthy life. The indicator is computed by comparing a probability distribution of habitual daily dietary energy consumption with a threshold level called the minimum dietary energy Requirement. Both are based on the notion of an average individual in the reference population (FAO 2019-03-05).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk Source: FAOSTAT and ESS calculations:	%	2015-2017 Very good data coverage. Indicator utilised in SDG Index for SDG 2	Yes, 2.1.1 (C020101). Could consider a health indicator such as 3.2.1 “Under-5 mortality rate” as an additional indicator of ‘healthy’ food?	Yes; it was the official Millennium Development Goal indicator for Goal 1, Target 1.9, and is now an SDG indicator
53	Food (SDG 2)	Percentage of children under 5 years of age affected by wasting ^{3 4}	Wasting prevalence is the proportion of children under five whose weight for height is more than two standard deviations below the median for the international reference population ages 0-59 months (FAO 2019-03-05).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk Source: World Development Indicators: http://data.worldbank.org/indicator/SH.STA.WAST.ZS + UNICEF et al. (2016) report an average prevalence of wasting in high-income countries of 0.75% , which has been assumed for high-income countries with missing data. The classification as a high-income country is based on the World Bank’s listing of high-income countries: https://data.worldbank.org/income-level/high-income	%	2016 Limited data. Need to utilise latest since coverage for the final year alone is scarce. Indicator utilised in SDG Index for SDG 2	No	Yes; if there is a strong correlation of data with SDG indicator 2.2.1’s data, one of the two indicators will be used to avoid noise in the dataset. However the correlation is good, but not too high. Both indicators can therefore be retained.
54	Food (SDG 2)	Percentage of children under 5 years of age who are stunted ⁵	Percentage of stunting (height-for-age less than -2 standard deviations of the WHO Child Growth Standards median) among children aged 0-59 months (FAO 2019-03-05).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk Source: World Development Indicators: http://data.worldbank.org/indicator/SH.STA.WAST.ZS + UNICEF et al. (2016) report an average prevalence of wasting in high income countries of 2.58% , which has been assumed for high-income countries with missing data. The classification as a high-income country is based on the World Bank’s listing of high-income countries: https://data.worldbank.org/income-level/high-income	%	2016 Limited data. Need to utilise most recent coverage for the final year alone is scarce. Indicator utilised in SDG Index for SDG 2	Yes, 2.2.1 (C020201)	Yes; this is an SDG indicator with sufficient data available for 153 countries.
55	Food (SDG 2)	The depth of the food deficit	The depth of the food deficit indicates how many calories would be needed to lift the undernourished from their status, everything else being constant. The	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk Version 15 Sep 2017	kCal/day	2014-2016 Very good data coverage.	No	No – Many countries, such as Denmark, Finland, Switzerland,

² “This is the traditional FAO hunger indicator, adopted as official Millennium Development Goal indicator for Goal 1, Target 1.9.” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk>).

³ “Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have a greater risk of suffering illness and death.” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk>)

⁴ The “two official indicators for the hunger target [are] the prevalence of undernourishment and the proportion of underweight children under 5 years of age” (<http://www.fao.org/3/a-i4671e.pdf>)

⁵ “This indicator belongs to a set of indicators whose purpose is to measure nutritional imbalance and malnutrition resulting in undernutrition (assessed by underweight, stunting and wasting) and overweight. Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have a greater risk of suffering illness and death.” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbh9V96Uk>)

		(kilocalories per person per day) ⁶	average intensity of food deprivation of the undernourished, estimated as the difference between the average dietary energy requirement and the average dietary energy consumption of the undernourished population (food-deprived), is multiplied by the number of undernourished to provide an estimate of the total food deficit in the country, which is then normalized by the total population (<i>World Bank 2019-03-06</i>).	Source: ESS calculations					Sweden, Norway have no data but are assumed to be close to zero (patched to 2.5 for geometric mean). Although this indicator has very good data, it has a very high correlation with the prevalence of undernourishment (0.95), and it has therefore been excluded in order to avoid double accounting
56	Food (SDG 2)	Average protein supply ⁷	National average protein supply (expressed in grams per caput per day) (<i>FAO 2019-03-06</i>)	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk Source: FAOSTAT	gr/caput/day	2011-2013 Very good data coverage	No, but it is FAO Indicator I_1.4	Yes; very good data availability and provides an indication of a healthy, varied diet	
57	Food (SDG 2)	Prevalence of obesity in the adult population (18 years and older)	Prevalence of obesity in the adult population is the percentage of adults ages 18 and over whose Body Mass Index (BMI) is more than 30 kg/m ² . Body Mass Index (BMI) is a simple index of weight-for-height or the weight in kilograms divided by the square of the height in meters (<i>FAO 2019-05-06</i>).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk Source: World Health Organization Global Health Observatory (GHO) http://apps.who.int/gho/data/node.main.A900A?lang=en	%	2016 Very good data coverage. Indicator utilised in SDG Index for SDG 2	No, but it is FAO Indicator I_4.8	Yes; since it is utilised within the SDG Index. Although it has a negative correlation with the levels of undernourishment, stunting and wasting, it measures a different portion of the population, i.e. adults >18 years old vs children <5 years old. It is viewed as being a key indicator of access to food despite the negative correlation with the other indicators listed in the access to food sub-index	
58	Food (SDG 2)	Average dietary energy supply adequacy ⁸	The indicator expresses the Dietary Energy Supply (DES) as a percentage of the Average Dietary Energy Requirement (ADER). Each country's or region's average supply of calories for food consumption is normalized by the average dietary energy requirement estimated for its population to provide an index of adequacy of the food supply in terms of calories (<i>FAO 2019-05-06</i>).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk Source: FAOSTAT and ESS calculations	%	2015-2017 Very good data coverage	No, but it is FAO Indicator I_1.1	Yes; less than 10% missing data	

⁶ “Complementary indicator to assess the multiple dimensions and manifestations of food insecurity and the policies for more effective interventions and responses” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk>) – *not available in latest update of downloadable data)

⁷ “This indicator provides information on the quality of the diet” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk>)

⁸ “Analysed together with the prevalence of undernourishment, it allows discerning whether undernourishment is mainly due to insufficiency of the food supply or to particularly bad distribution.” (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk>)

59	Food (SDG 2)	Cereal import dependency ratio	The cereal imports dependency ratio tells how much of the available domestic food supply of cereals has been imported and how much comes from the country's own production. It is computed as $(\text{cereal imports} - \text{cereal exports}) / (\text{cereal production} + \text{cereal imports} - \text{cereal exports}) * 100$. Given this formula the indicator assumes only values ≤ 100 . Negative values indicate that the country is a net exporter of cereals (FAO 2019-03-06).	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96UkBU : Source: FAOSTAT and ESS calculations	%	2011-2013 Good data coverage	No, but it is FAO indicator I_3.1	No; it is a good indicator, but several high-income countries do not measure this ratio since it is not relevant to them (30.9% missing data for 181 countries). This indicator can be truncated at zero in order to exclude exports from this indicator, since the indicator is essentially measuring both imports and exports. Imports are important to this index as they speak of the level of self-sufficiency in food production and security. Yet this indicator has a negative correlation with the other indicators within the "Access" sub-pillar of the "Food" sub-index, and is therefore excluded.
60	Food (SDG 2)	Prevalence of severe food insecurity in the total population ⁹	The prevalence of severe food insecurity is an estimate of the percentage of people in the population who live in households classified as severely food insecure. The assessment is conducted using data collected with the Food Insecurity Experience Scale or a compatible experience-based food security measurement questionnaire (such as the HFSSM, the HFIAS, the EBIA, the ELCSA, etc.). The probability to be food insecure is estimated using the one-parameter logistic Item Response Theory model (the Rasch model) and thresholds for classification are made cross country comparable by calibrating the metrics obtained in each country against the FIES global reference scale, maintained by FAO. The threshold to classify "severe" food insecurity corresponds to the severity associated with the item "having not eaten for an entire day" on the global FIES scale. In simpler terms, a household is classified as severely food insecure when at least one adult in the household has reported to have been exposed, at times during	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk Source: National surveys/Gallup World Poll and ESS calculations	%	2015-2017 Data missing for many countries	Yes, indicator 2.1.2 (C020102) and FAO indicator I_2.4	No; >60% of countries do not have records for this indicator. This is very low. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data. On this basis, this indicator is unfortunately excluded. It is unfortunate because this is an official SDG indicator.

⁹ "This is indicator 2.1.2 in the SDG framework, to monitor target 2.1 ("By 2030, end hunger and ensure access by all people, [...], to safe, nutritious and sufficient food all year round")." (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDMbH9V96Uk>)

			the year, to several of the most severe experiences described in the FIES questions, such as to have been forced to reduce the quantity of the food, to have skipped meals, having gone hungry, or having to go for a whole day without eating because of a lack of money or other resources. It is an indicator of lack of food access (FAO 2019-03-06)					
61	Food (SDG 2)	Number of severely food insecure people	Estimated number of people living in households classified as severely food insecure. It is calculated by multiplying the estimated percentage of people affected by severe food insecurity (I_2.4) by the total population.	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk Source: ESS calculations	Millions of people	2015-2017 Poor data coverage	No	No, for same reason as "Prevalence of severe food insecurity in the total population"
62	Food (SDG 2)	The share of food expenditure of the poor ¹⁰	The proportion of food consumption over total consumption (food and non-food) for the lowest income quintile of the population. Due to the way in which the share of food expenditures is defined in the sources of data, this indicator captures the monetary value of food obtained from all the possible food sources (purchases, own-production, gift, in-kind payment, etc.), rather than just the monetary value of purchased food. Total consumption expenditures include both food and non-food expenditures and exclude non-consumption expenditures such as taxes, insurances, etc.	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk Source: ESS calculations	%	2014* Very poor data coverage	No	No, very poor data coverage, and this indicator is not included in latest list of FAO indicators.
63	Food (SDG 2)	Cereal yield	Cereal yield, measured as kilograms per hectare of harvested land, includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains. Production data on cereals relate to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed, or silage and those used for grazing are excluded. The FAO allocates production data to the calendar year in which the bulk of the harvest took place. Most of a crop harvested near the end of a year will be used in the following year (<i>World Bank 2019-03-06</i>).	https://data.worldbank.org/indicator/AG.YLD.CREL.KG?view=chart Source: World Bank	kg per hectare	2016 Very good data coverage. Indicator utilised in SDG Index for SDG 2	No	Yes; good data availability and the indicator is relevant to food security
64	Food (SDG 2)	Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size	Volume of agricultural production of small-scale food producer in crop, livestock, fisheries, and forestry activities per number of days (UN Stats, 2018)	Not available	Volume/production unit	None	Yes; indicator 2.3.1	No; there is no usable data available yet
65	Food (SDG 2)	Average income of small-scale food producers, by sex	measures income from on-farm production activities, which is related to the production of food and agricultural products. This includes income from crop	Not available	Annual income	None; data is still not available in a systematic and	Yes; indicator 2.3.2	No; there is no usable data available yet

¹⁰ "According to the Engel's Law, the higher the income of a household, the lower the proportion of income spent on food. When applied at the National level, this indicator reflects the living standard of a country, as well as the vulnerability of a country to food price increases. Due to the lack/unreliability of income data, this indicator has been built as the ratio between food consumption and total consumption, hence using total consumption as a proxy income. Finally, given the higher vulnerability of the poorer households to food price increase, this indicator only encompasses the share of food consumption of the lowest income quintile of a country population" (<http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.WDmBh9V96Uk> – *not available in latest update of downloadable data)

		and indigenous status	production, livestock production, fisheries and aquaculture production, and from forestry production. The indicator is computed as annual income (UN Stats, 2018)			harmonized fashion		
66	Food (SDG 2)	Proportion of agricultural area under productive and sustainable agriculture	measure both the extent of land under productive and sustainable agriculture, as well as the extent of land area under agriculture. Focuses on agricultural land, and therefore primarily on land that is used to grow crops and raise livestock (UN Stats, 2018)	Not available	Percentage	None	Yes; indicator 2.4.1	No, no data readily available
67	Food (SDG 2)	Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities	The conservation of plant and animal genetic resources for food and agriculture (GRFA) in medium or long term conservation facilities (ex situ in genebanks) represents the most trusted means of conserving genetic resources worldwide. Plant and animal GRFA conserved in these facilities can be easily used in breeding programmes as well, even directly on-farm (UN Stats, 2018)	Not available yet, although data compilers have been appointed per country. http://www.fao.org/dad-is/sdg-251/en/	No. of species	None	Yes; indicator 2.5.1	No; there is no usable data available yet
68	Food (SDG 2)	Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction	The indicator presents the percentage of livestock breeds classified as being at risk, not at risk or of unknown risk of extinctions at a certain moment in time, as well as the trends for those percentages (UN Stats, 2018)	http://www.fao.org/dad-is/dataexport/en/ Source: FAO	Percentage	Data collection dates are not specified. Data is available for various species per country.	Yes; indicator 2.5.2	No; although data is available per country, it seems like the data was only collected once as no sampling dates are specified
69	Food (SDG 2)	The agriculture orientation index for government expenditures	The Agriculture Orientation Index (AOI) for Government Expenditures is defined as the Agriculture Share of Government Expenditures, divided by the Agriculture Share of GDP, where Agriculture refers to the agriculture, forestry, fishing and hunting sector. The measure in a currency-free index, calculated as the ratio of these two shares. National governments are requested to compile Government Expenditures according to the international Classification of Functions of Government (COFOG), and Agriculture Share of GDP according to the System of National Accounts (SNA) (UN Stats, 2018)	http://www.fao.org/faostat/en/#data/IG/visualize Source: FAOSTAT	Percentage	Data can be calculated using government expenditure and GDP, but data specific for this indicator is not available.	Yes; indicator 2. a.1	No; although there is data per country available, it is fragmented. Further, it is not best practice to incorporate an index as part of another index.
70	Food (SDG 2)	Total official flows (official development assistance plus other official flows) to the agriculture sector	Gross disbursements of total ODA and other official flows from all donors to the agriculture sector (UN Stats, 2018)	Food aid: https://www.oecd-ilibrary.org/development/data/oecd-international-development-statistics/official-and-private-flows_data-00072-en	Million USD	Data is available from 1995-2017 for 35 countries with data missing for some years.	Yes; indicator 2. a.2	No; data is only available for 35 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
71	Food (SDG 2)	Agricultural export subsidies	Agricultural export subsidies are defined as export subsidies budgetary outlays and quantities as notified by WTO Members in Tables ES:1 and supporting Tables ES:2 (following templates in document G/AG/2 dated 30 June 1995) (UN Stats, 2018)	https://www.wto.org/english/tratop_e/agric_e/transparency_toolkit_e.htm Source: World Trade Organization	Million USD	Data is available from 1995-2014 for 24 countries.	Yes; indicator 2. b.1	No; although it is important to consider financial flows of food export, this level of detail is not yet required in this WEF nexus framework

72	Food (SDG 2)	Indicator of food price anomalies	The indicator of food price anomalies (IFPA) identifies markets prices that are abnormally high. The IFPA relies on a weighted compound growth rate that accounts for both within year and across year price growth. The indicator directly evaluates growth in prices over a particular month over many years, taking into account seasonality in agricultural markets and inflation, allowing to answer the question of whether or not a change in price is abnormal for any particular period (UN Stats, 2018)	http://www.fao.org/giews/food-prices/tool/public/#/dataset/international	-	Data available for 2016 for 57 countries (specifically for rice; data also available for wheat, sorghum, maize, and millet)	Yes; indicator 2. c.1	No; data is difficult to manage as it does not download to an excel format. Further, it is not best practice to incorporate an index as part of another index.
73	Food (SDG 2)	Global food loss index	<i>No data for this indicator is currently available and its methodology is still under development (UN Stats, 2018)</i>	Not available yet	-	None	Yes; indicator 12.3.1	No; although this indicator is an SDG indicator it is not best practice to incorporate an index as part of another index.
74	Food (SDG 2)	Average value of food production	The indicator expresses the food net production value (in constant 2004-06 international dollars), as estimated by FAO and published by FAOSTAT, in per capita terms (FAO 2019-03-06)	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.Xlix_8t7lhG	I\$ per caput	Data available from 1999-2014 for 201 countries.	No, but it is FAO indicator I_1.2	Yes ; very good data coverage that includes data from 201 countries. The data can be used to infer priorities in terms of resource allocation in the WEF nexus.
75	Food (SDG 2)	Value of food imports over total merchandise exports	Value of food (excl. fish) imports over total merchandise exports (FAO 2019-03-06)	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.Xlix_8t7lhG	Percentage	Data available from 1999-2011 for 193 countries	No, but it is FAO indicator I_3.3	No, very good data coverage that includes data from 193 countries. However, there is a low correlation (<0.4) with other key indicators relating to food availability.
76	Food (SDG 2)	Agricultural machinery	Agricultural machinery refers to the number of wheel and crawler tractors (excluding garden tractors) in use in agriculture at the end of the calendar year specified or during the first quarter of the following year. 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 (FAO: 2019-04-29)	https://data.worldbank.org/indicator/AG.LND.TRAC.ZS?view=chart Source: Food and Agriculture Organization, electronic files and web site	Tractors/100 km ² of arable land	Data available from 1961-2009; for only 8 countries in 2009 but for approximately 164 countries in 1965	No	No, this indicator was measured widely up until 2000, and to some degree until 2008, but is no longer recorded.
77	Food (SDG 2)	Percent of arable land equipped for irrigation	Ratio between arable land equipped for irrigation and total arable land. Arable land is defined as the land under temporary agricultural crops (multiple-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for arable land are	http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.Xlix_8t7lhG Source: FAOSTAT and ESS calculations (11 Sep 2018)	%	Data available from 1999 to-2015 for 178 countries with missing data for some years.	No, but it is FAO indicator I_3.2	No, irrigation is a major user of water worldwide, and a key component of the WEF nexus, despite it having a poor correlation with some of the other indicators in food availability. This indicator has a negative correlation with the other indicators within

			not meant to indicate the amount of land that is potentially cultivable. Total arable land equipped for irrigation is defined as the area equipped to provide water (via irrigation) to the crops. It includes areas equipped for full and partial control irrigation, equipped lowland areas, pastures, and areas equipped for spate irrigation (FAO: 2019-04-29).					the "Access" sub-pillar of the "Food" sub-index, and is therefore excluded.
78	Food (SDG 2)	Agriculture, forestry and fishery, value added	Agriculture corresponds to ISIC divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3. Note: This value is not specific to crop production, so care should be taken to ensure proper implementation.(FAO 2019-05-25)	https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS Source: Food and Agriculture Organization, AQUASTAT data	% of GDP	Data available from 1966-2017 with many missing data per year. Most recent data are available for 2012 for 171 countries.	No	No, very good data availability and very relevant indicator regarding the value of land and water-based products/food to the economy, but low correlation with most indicators contributing to food availability
79	Food (SDG 2)	Electricity capacity in MW for renewable municipal waste	???	https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	MW	Data available from 2000-2018 with many missing data per country. Most recent data are available for 2018 for 41 countries.	No	No; data is only available for 41 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
80	Food (SDG 2)	Electricity generation in GWh for renewable municipal waste	???	https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	GWh	Data available from 2000-2016 with many missing data per country. Most recent data are available for 2016 for 37 countries.	No	No; data is only available for 37 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
81	Food (SDG 2)	Electricity capacity in MW for solid biofuel		https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	MW	Data available from 2000-2018 with many missing data per country. Most recent data are available for 2018 for 108 countries.	No	No, this data is included in the renewable energy consumption and output indicators
82	Food (SDG 2)	Electricity generation in GWh for solid biofuel		https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy	GWh	Data available from 2000-2016 with many missing data per country. Most recent data are available for	No	No, this data is included in the renewable energy consumption and output indicators

				Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.		2016 for 103 countries.		
83	Food (SDG 2)	Electricity capacity in MW for liquid biofuel		https://www.irena.org/Statistics/View-Data-by-Topic/Capacity-and-Generation/Technologies	MW	Data available from 2000-2018 with many missing data per country. Most recent data are available for 2018 for 14 countries.	No	No; data is only available for 14 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
84	Food (SDG 2)	Electricity generation in GWh for liquid biofuel		Source: Source: IRENA (2019), Renewable capacity statistics 2019; and IRENA (2018), Renewable Energy Statistics 2018, The International Renewable Energy Agency, Abu Dhabi.	GWh	Data available from 2000-2016 with many missing data per country. Most recent data are available for 2016 for 17 countries.	No	No; data is only available for 17 countries. The JRC-COIN guideline is that at an indicator level 65% of countries should have valid data.
85	Food (SDG 2)	Alien invasive species	Area of agricultural land that has been encroached by alien invasive species, resulting in less arable land for food production and an increase in water consumption	Not available	Ha/year	None	No	No; there is no usable data available yet however it is important to consider alien invasive plant species as they affect food and water security
86	Food (SDG 2)	Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species	Commitment by countries to relevant multinational agreements, specifically: (1) National adoption of invasive alien species-relevant international policy. (2) Percentage of countries with (a) national strategies for preventing and controlling invasive alien species; and (b) national legislation and policy relevant to invasive alien species. The translation of policy arrangements into action by countries to implement policy and actively prevent and control invasive alien species IAS and the resourcing of this action, specifically: (3) National allocation of resources towards the prevention or control of invasive alien species. (UN Stats, 2018)	Not available	%	None	Yes; indicator 15.8.1	No; there is no usable data available yet
87	Food (SDG 2)	Pests destroying crops ²	Hectares of crops that are lost per year due to the invasion of pest species (armyworm, corn root worm etc) and diseases caused by fungi and bacteria (potato blight, coffee leaf rust etc)	Not available	Ha/year or kg/ha	None	No	No; there is no usable data available yet however it is important to consider pests as they are seen as the greatest threat to food security, and indirectly affects water security.