**Basic Set of Environment Statistics** 28 August 2018

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| **Component 1: Environmental Conditions and Quality** |
|
| Sub-component 1.1: Physical Conditions |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 1.1.1: Atmosphere, climate and weather**  | a. | Temperature |   | ▪ National▪ Sub-national | ▪ World Meteorological Organization (WMO)▪ Intergovernmental Panel on Climate Change (IPCC)▪ National Oceanic and Atmospheric Administration (NOAA)/National Aeronautics and Space Administration (NASA) |
|   | 1. **Monthly average** | Degrees |
|   | 2. **Minimum monthly average** | Degrees |
|   | 3. **Maximum monthly average** | Degrees |
| b. | Precipitation (also in 2.6.1.a) |  |
|   | 1. **Annual average** | Height |
|   | 2. **Long-term annual average** | Height |
|   | 3. Monthly average | Height |
|   | 4. Minimum monthly value  | Height |
|   | 5. Maximum monthly value | Height |
| c. | Relative humidity |  |
|   | 1. Minimum monthly value | Number |
|   | 2. Maximum monthly value | Number |
| d. | Pressure  |  | ▪ National▪ Sub-national▪ By station |
|   | 1. *Minimum monthly value* | Pressure unit |
|   | 2. *Maximum monthly value* | Pressure unit |
| e. | Wind speed  |  | ▪ National▪ Sub-national |
|   | 1. *Minimum monthly value* | Speed |
|   | 2. *Maximum monthly value* | Speed |
| f. | Solar radiation  |  | ▪ WMO▪ IPCC▪ NOAA/NASA  |
|   | 1. *Average daily value* | Area, Energy unit |
|   | 2. *Average monthly value* | Area, Energy unit |
|   | 3. *Number of hours of sunshine* | Number | ▪ National▪ Sub-national▪ By month and per year |
| g. | UV radiation  |  | ▪ National▪ Sub-national | ▪ World Health Organization (WHO)-UV Radiation Index▪ WMO-UV Radiation |
|   | 1. *Maximum daily value* | Area, Energy unit |
|   | 2. *Average daily value* | Area, Energy unit |
|   | 3. *Maximum monthly value* | Area, Energy unit |
|   | 4. *Average monthly value* | Area, Energy unit |
| h. | Occurrence of El Niño/La Niña events, when relevant |  | ▪ By location▪ National▪ Sub-national |
|   | 1. *Occurrence* | Number |
|   | 2. *Time period* | Time period |
| **Topic 1.1.2: Hydrographical characteristics** | a. | Lakes  |  | ▪ By location▪ By watershed/river basin▪ National▪ Sub-national  | ▪ United Nations Statistics Division (UNSD): International Recommendations for Water Statistics (IRWS)▪ UN-Water |
|   | 1. Surface area | Area |
|   | 2. *Maximum depth* | Depth |
| b. | Rivers and streams |  |
|   | 1. Length | Length |
| c. | Artificial reservoirs |  |
|   | 1. *Surface area* | Area |
|   | 2. *Maximum depth* | Depth |
| d. | Watersheds |  |
|   | 1. **Description of main watersheds** | Area, Description |
| e. | Seas |  | ▪ By location▪ National, within coastal waters or Exclusive Economic Zone (EEZ) |
|   | 1. Coastal waters | Area |
|   | 2. Territorial sea | Area |
|   | 3. Exclusive Economic Zone (EEZ) | Area |
|   | 4. *Sea level* | Depth |
|   | 5. *Area of sea ice* | Area |
| f.  | *Aquifers* | Depth, Description | ▪ By location▪ By salinity levels▪ By watershed▪ National▪ Sub-national▪ Renewable▪ Non-renewable |
| g. | Glaciers  | Area | ▪ By location▪ National▪ Sub-national |
| **Topic 1.1.3: Geological and geographical information** | a. | Geological, geographical and geomorphological conditions of terrestrial areas and islands |  | ▪ National | ▪ UNSD: Demographic Yearbook▪ Food and Agriculture Organization of the United Nations (FAO)▪ Center for International Earth Science Information Network (CIESIN) |
|   | 1. Length of border | Length |
|   | 2. **Area of country or region** | Area, Location |
|   | 3. Number of islands | Number | ▪ By location▪ National |
|   | 4. Area of islands | Area |
|   | 5. *Main geomorphological characteristics of islands* | Description |
|   | 6. *Spatial distribution of land relief* | Description, Location |
|   | 7. *Characteristics of landforms* (e.g., plains, hills, plateaus, dunes, volcanoes, mountains, seamounts) | Description, Area, Height |
|   | 8. *Area by rock types* | Area |
|   | 9. *Length of fault lines* | Length |
| b. | **Coastal waters** (including area of coral reefs and mangroves)  | Area, Description |
| c. | **Length of marine coastline** | Length |
| d. | **Coastal area** | Area |
| **Topic 1.1.4: Soil characteristics** | a. | Soil characterization |  | ▪ By location▪ By soil type▪ National▪ Sub-national  | ▪ FAO and the International Institute for Applied Systems Analysis (IIASA) Harmonized World Soil Database▪ International Soil Reference and Information Centre (ISRIC) World Data Centre for Soils▪ United Nations Convention to Combat Desertification (UNCCD)▪ FAO Global Assessment of Human-induced Soil Degradation (GLASOD) |
|   | 1. **Area by soil types** | Area |
| b. | Soil degradation |  |
|   | 1. **Area affected by soil erosion** | Area |
|   | 2. **Area affected by desertification** | Area |
|   | 3. Area affected by salinization | Area |
|   | 4. Area affected by waterlogging | Area |
|   | 5. Area affected by acidification | Area |
|   | 6. *Area affected by compaction* | Area |
| c. | Nutrient content of soil, measured in levels of: |  | ▪ By soil type▪ By nutrient▪ National▪ Sub-national  |
|   | 1. Nitrogen (N) | Concentration |
|   | 2. Phosphorous (P) | Concentration |
|   | 3. *Calcium (Ca)* | Concentration |
|   | 4. *Magnesium (Mg)* | Concentration |
|   | 5. *Potassium (K)* | Concentration |
|   | 6. *Zinc (Zn)* | Concentration |
|  | 7. *Other* | Concentration |

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| **Component 1: Environmental Conditions and Quality** |
|
| Sub-component 1.2: Land Cover, Ecosystems and Biodiversity |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 1.2.1: Land cover**  | a.  | **Area under land cover categories** | Area | ▪ By location▪ By type of land cover (e.g., artificial surfaces including urban and associated areas; herbaceous crops; woody crops; multiple or layered crops; grassland; tree-covered areas; mangroves; shrub-covered areas; shrubs and/or herbaceous vegetation, aquatic or regularly flooded; sparsely natural vegetated areas; terrestrial barren land; permanent snow and glaciers; inland water bodies; and coastal water bodies and inter-tidal areas)(a)▪ National▪ Sub-national  | ▪ FAO Land Cover Classification System▪ System of Environmental-Economic Accounting (SEEA) Central Framework (2012) land cover categories▪ European Environment Agency (EEA)  |
| **Topic 1.2.2: Ecosystems and biodiversity** | a. | General ecosystem characteristics, extent and pattern |  | ▪ By location▪ By ecosystem (e.g., forest, cultivated, dryland, coastal, marine, urban, polar, inland water, island, mountain)(b) | ▪ Millennium Ecosystem Assessment ▪ Convention on Biological Diversity (CBD)▪ UN Economic Commission for Europe (UNECE) Standard Statistical Classification of Flora, Fauna and Biotopes (1996)▪ Convention on Wetlands of International Importance, especially as Waterfowl Habitat (the Ramsar Convention)  |
|   | 1. **Area of ecosystems** | Area |
|   | 2. *Proximity of ecosystem to urban areas and cropland* | Distance |
| b. | Ecosystems' chemical and physical characteristics |  |
|   | 1. *Nutrients* | Concentration |
|   | 2. *Carbon* | Concentration |
|   | 3. *Pollutants* | Concentration |
| c. | Biodiversity |  | ▪ By ecosystem (e.g., forest, cultivated, dryland, coastal, marine, urban, polar, inland water, island, mountain)(b)▪ By status category (e.g., extinct, extinct in the wild, threatened, near threatened, least concern)▪ By class (e.g., mammals, fishes, birds, reptiles)▪ National▪ Sub-national | ▪ Millennium Ecosystem Assessment▪ CBD▪ International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species▪ UNECE Standard Statistical Classification of Flora, Fauna and Biotopes (1996)▪ FAO FISHSTAT (Species population and number of invasive alien species) |
|   | 1. **Known flora and fauna species** | Number |
|   | 2. Endemic flora and fauna species | Number |
|   | 3.Invasive alien flora and fauna species | Number |
|  | 4. Species population | Number |
|  | 5. *Habitat fragmentation* | Area, Description, Location, Number |
|  | d. | Protected areas and species |  | ▪ By location▪ By management category(c)▪ By ecosystem (e.g., forest, cultivated, dryland, coastal, marine, urban, polar, inland water, island, mountain)(b)▪ National▪ Sub-national | ▪ IUCN Protected Area Management Categories▪ UNSD: Millennium Development Goal (MDG) Indicator 7.6 Metadata |
|  | 1. **Protected terrestrial and marine area** (also in 1.2.3.a) | Number, Area |
| 2. Protected flora and fauna species | Number | ▪ By species▪ By ecosystem (e.g., forest, cultivated, dryland, coastal, marine, urban, polar, inland water, island, mountain)(b)▪ By status category▪ National▪ Sub-national | ▪ IUCN Red List of Threatened Species▪ UNSD: MDG Indicator 7.7 Metadata |
| (a) SEEA land cover categories, based on FAO Land Cover Classification System (<http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf>)(b) Reporting categories used in the Millennium Ecosystem Assessment (<http://www.millenniumassessment.org/documents/document.356.aspx.pdf>)(c) IUCN reporting categories: Strict nature reserves; Wilderness areas; National parks, Natural monuments or features; Habitat/species management areas; Protected landscapes/seascapes; and Protected areas with sustainable use of natural resources ([http://www.iucn.org/theme/protected-areas/about/categories](http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_pacategories/)) |
| **Topic 1.2.3: Forests** | a. | Forest area  |   | ▪ By forest type▪ National▪ Sub-national▪ By dominant tree species▪ By ownership category | ▪ FAO Global Forest Resources Assessment (FRA)▪ UN Forum on Forests (UNFF) Monitoring, Assessment and Reporting (MAR)▪ UNSD: MDG Indicator 7.1 Metadata▪ Montreal Process (Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests)▪ State of Europe's Forests (Forest Europe/UNECE-FAO Forestry and Timber Section) |
|   | 1. **Total** | Area |
|   | 2. Natural | Area |
|   | 3. Planted | Area |
|   | 4. Protected forest area(also in 1.2.2.d) | Area |
|   | 5. Forest area affected by fire | Area |
| b. | Forest biomass |  |
|   | 1. Total | Volume |
|   | 2. *Carbon storage in living forest biomass* | Mass |

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| **Component 1: Environmental Conditions and Quality** |
|
| Sub-component 1.3: Environmental Quality |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 1.3.1: Air quality**  | a. | Local air quality  |   | ▪ By point measurement▪ Sub-national▪ Daily maximum▪ Monthly maximum and average▪ Yearly maximum and average | ▪ WHO Air Quality Guidelines-Global Update 2005, Particulate matter, ozone, nitrogen dioxide and sulfur dioxide▪ WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide, Global Update 2005, Summary of risk assessment▪ UNECE Standard Statistical Classification of Ambient Air Quality (1990) |
|   | 1. **Concentration level of particulate matter (PM10)** | Concentration |
|   | 2. **Concentration level of particulate matter (PM2.5)** | Concentration |
|   | 3. **Concentration level of tropospheric ozone (O3)** | Concentration |
|   | 4. **Concentration level of carbon monoxide (CO)** | Concentration |
|   | 5. **Concentration level of sulphur dioxide (SO2)** | Concentration |
|   | 6. **Concentration levels of nitrogen oxides (NOX)** | Concentration |
|   | 7. Concentration levels of heavy metals | Concentration |
|   | 8. Concentration levels of non-methane volatile organic compounds (NMVOCs) | Concentration |
|   | 9. *Concentration levels of dioxins* | Concentration |
|   | 10. *Concentration levels of furans* | Concentration |
|   | 11. Concentration levels of other pollutants | Concentration |
|   | 12. Number of days when maximum allowable levels were exceeded per year | Number | ▪ By pollutant |
| b. | Global atmospheric concentrations of greenhouse gases |  | ▪ Global | ▪ WMO |
|   | 1. Global atmospheric concentration level of carbon dioxide (CO2) | Concentration |
|   | 2. Global atmospheric concentration level of methane (CH4) | Concentration |
| **Topic 1.3.2: Freshwater quality** | a. | Nutrients and chlorophyll |  | ▪ By water body▪ By watershed/river basin ▪ By surface or groundwater ▪ By point measurement▪ By type of water resource | ▪ UNECE Standard Statistical Classification of Freshwater Quality for the Maintenance of Aquatic Life (1992)▪ UN Environment Programme (UNEP) Global Environment Monitoring System-Water (GEMS-Water)▪ WHO |
|   | 1. **Concentration level of nitrogen** | Concentration |
|   | 2. **Concentration level of phosphorous** | Concentration |
|   | 3. Concentration level of chlorophyll A | Concentration |
| b. | Organic matter |  |
|   | 1. **Biochemical oxygen demand (BOD)** | Concentration |
|   | 2. Chemical oxygen demand (COD) | Concentration |
| c. | Pathogens |  |
|   | 1. **Concentration levels of faecal coliforms** | Concentration |
| d. | Metals (e.g., mercury, lead, nickel, arsenic, cadmium) |  |
|   | 1. Concentration levels in sediment and freshwater | Concentration |
|   | 2. Concentration levels in freshwater organisms | Concentration |
| e. | Organic contaminants (e.g., PCBs, DDT, pesticides, furans, dioxins, phenols, radioactive waste) |  | ▪ UNECE Standard Statistical Classification of Freshwater Quality for the Maintenance of Aquatic Life (1992)▪ UNEP GEMS-Water▪ Stockholm Convention |
|   | 1. Concentration levels in sediment and freshwater | Concentration |
|   | 2. Concentration levels in freshwater organisms | Concentration |
| f. | Physical and chemical characteristics |  | ▪ UNECE Standard Statistical Classification of Freshwater Quality for the Maintenance of Aquatic Life (1992)▪ UNEP GEMS-Water |
|   | 1. pH/Acidity/Alkalinity | Level |
|   | 2. Temperature | Degrees |
|   | 3. *Total suspended solids (TSS)* | Concentration |
|   | 4. Salinity | Concentration |
|   | 5. Dissolved oxygen (DO) | Concentration |
| g. | Plastic waste and other freshwater debris |  |
|   | 1. Amount of plastic waste and other debris | Area, Mass |
| **Topic 1.3.3: Marine water quality**  | a. | Nutrients and chlorophyll |  | ▪ By coastal zone, delta, estuary or other local marine environment▪ Sub-national▪ National▪ Supranational▪ By point measurement▪ By water resource | ▪ UNECE Standard Statistical Classification of Marine Water Quality (1992)▪ NOAA/NASA▪ UNEP Regional Seas Programme |
|   | 1. **Concentration level of nitrogen** | Concentration |
|   | 2. **Concentration level of phosphorous** | Concentration |
|   | 3. Concentration level of chlorophyll A | Concentration |
| b. | Organic matter |  |
|   | 1. **Biochemical oxygen demand (BOD)** | Concentration |
|   | 2. Chemical oxygen demand (COD) | Concentration |
| c. | Pathogens |  |
|   | 1. Concentration levels of faecal coliforms in recreational marine waters | Concentration |
| d. | Metals (e.g., mercury, lead, nickel, arsenic, cadmium)  |  |
|   | 1. Concentration levels in sediment and marine water | Concentration |
|   | 2. Concentration levels in marine organisms | Concentration |
| e. | Organic contaminants (e.g., PCBs, DDT, pesticides, furans, dioxins, phenols, radioactive waste) |  | ▪ UNECE Standard Statistical Classification of Marine Water Quality (1992)▪ NOAA/NASA▪ UNEP Regional Seas Programme▪ Stockholm Convention |
|   | 1. *Concentration levels in sediment and marine water* | Concentration |
|   | 2. *Concentration levels in marine organisms* | Concentration |
| f. | Physical and chemical characteristics  |  | ▪ UNECE Standard Statistical Classification of Marine Water Quality (1992)▪ NOAA/NASA▪ UNEP Regional Seas Programme |
|   | 1. *pH/Acidity/Alkalinity* | Level |
|   | 2. Temperature | Degrees |
|   | 3. *Total suspended solids (TSS)* | Concentration |
|   | 4. *Salinity* | Concentration |
|   | 5. Dissolved oxygen (DO) | Concentration |
|   | 6. *Density* | Density |
| g. | Coral bleaching  |  |
|   | 1. **Area affected by coral bleaching** | Area |
| h. | Plastic waste and other marine debris |  | ▪ By coastal zone, delta, estuary or other local marine environment▪ By location▪ Sub-national▪ National▪ Supranational▪ By point measurement | ▪ UNECE Standard Statistical Classification of Marine Water Quality (1992)▪ NOAA/NASA▪ UNEP Regional Seas Programme |
|   | 1. *Amount of plastic waste and other debris in marine waters* | Area, Mass |
| i. | Red tide |  |
|   | 1. *Occurrence* | Number |
|   | 2. *Impacted area* | Area |
|   | 3. *Duration* | Duration |
| j. | Oil pollution |  |
|   | 1. *Area of oil slicks* | Area |
|   | 2. *Amount of tar balls* | Area, Diameter, Number |
| **Topic 1.3.4: Soil pollution** | a. | Sites affected by pollution |  | ▪ By location▪ Sub-national▪ By type of pollutant▪ By source |   |
|   | 1. Contaminated sites | Area, Number |
|   | 2. Potentially contaminated sites | Area, Number |
|   | 3. Remediated sites | Area, Number |
|   | 4. Other sites | Area, Number |
| **Topic 1.3.5: Noise**  | a. | Noise levels from specific sources | Level | ▪ By source▪ By location▪ Sub-national  | ▪ WHO |
| b. | Noise levels in specific locations | Level |

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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.1: Mineral Resources |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.1.1: Stocks and changes of mineral resources** | a. | Mineral resources |   | ▪ By mineral (e.g., metal ores including precious metals and rare earths, coal, oil, gas, stone, sand and clay, chemical and fertilizer minerals, salt, gemstones, abrasive minerals, graphite, asphalt, natural solid bitumen, quartz, mica)▪ National▪ Sub-national  | ▪ United Nations Framework Classification for Energy and Mineral Resources (UNFC 2009)▪ SEEA Central Framework (2012) asset and physical flow accounts▪ International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4, Section B, Divisions 05-09 |
|   | 1. **Stocks of commercially recoverable resources** | Mass, Volume |
|   | 2. New discoveries | Mass, Volume |
|   | 3. *Upward reappraisals* | Mass, Volume |
|   | 4. *Upward reclassifications* | Mass, Volume |
|   | 5. **Extraction** | Mass, Volume |
|   | 6. *Catastrophic losses* | Mass, Volume |
|   | 7. *Downward reappraisals* | Mass, Volume |
|   | 8. *Downward reclassifications* | Mass, Volume |
|   | 9. Stocks of potentially commercially recoverable resources | Mass, Volume |
|   | 10. *Stocks of non-commercial and other known resources* | Mass, Volume |
| **Topic 2.1.2: Production and trade of minerals** | a. | Production of minerals | Mass, Volume | ▪ Harmonized Commodity Description and Coding Systems (HS) 2012, Section V, Chapters 25 and 26, and Section VI Chapter 28 |
| b. | Imports of minerals  | Currency, Mass, Volume |
| c. | Exports of minerals | Currency, Mass, Volume |

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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.2: Energy Resources |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.2.1: Stocks and changes of energy resources** | a. | Energy resources |   | ▪ By resource (e.g., natural gas, crude oil and natural gas liquids, oil shale, and extra heavy oil (includes oil extracted from oil sands), coal andlignite, peat, non-metallic minerals except for coal or peat, uranium and thorium ores)▪ National▪ Sub-national | ▪ UNSD: International Recommendations for Energy Statistics (IRES)▪ International Energy Agency (IEA) Energy Statistics Manual▪ SEEA Central Framework (2012) asset and physical flow accounts▪ UNFC 2009▪ ISIC Rev. 4, Section B, Divisions 05-09▪ HS 2012, Section V, Chapter 27 |
|   | 1. **Stocks of commercially recoverable resources** | Mass, Volume |
|   | 2. New discoveries | Mass, Volume |
|   | 3. *Upward reappraisals* | Mass, Volume |
|   | 4. *Upward reclassifications* | Mass, Volume |
|   | 5. **Extraction** | Mass, Volume |
|   | 6. *Catastrophic losses* | Mass, Volume |
|   | 7. *Downward reappraisals* | Mass, Volume |
|   | 8. *Downward reclassifications* | Mass, Volume |
|   | 9. Stocks of potentially commercially recoverable resources | Mass, Volume |
|   | 10. *Stocks of non-commercial and other known resources* | Mass, Volume |
| **Topic 2.2.2: Production, trade and consumption of energy**  | a. | Production of energy  |  | ▪ By non-renewable resource (e.g., petroleum, natural gas, coal, nuclear fuels, non-sustainable firewood, waste, other non-renewables)▪ By renewable resource (e.g., solar, hydroelectric, geothermal, tidal action, wave action, marine, wind, biomass)▪ National▪ Sub-national | ▪ UNSD: IRES▪ IEA Energy Statistics Manual▪ Joint Wood Energy Enquiry (UNECE-FAO Forestry and Timber Section) |
|   | 1. **Total production** | Energy unit, Mass, Volume |
|   | 2. **Production from non-renewable sources** | Energy unit, Mass, Volume |
|   | 3. **Production from renewable sources** | Energy unit, Mass, Volume |
|   | 4. **Primary energy production** | Energy unit, Mass, Volume | ▪ By primary energy resource (e.g., petroleum, natural gas, coal, hydroenergy, geothermal, nuclear fuels, cane products, other primary)▪ By secondary energy product (e.g., electricity, liquefied petroleum gas, gasoline/alcohol, kerosene, diesel oil, fuel oil, coke, charcoal, gases, other secondary)▪ National▪ Sub-national |
|  | 5. Imports of energy | Energy unit, Mass, Volume |
|  | 6. Exports of energy | Energy unit, Mass, Volume |
|   | 7. **Secondary energy production**  | Energy unit, Mass, Volume |
| b. | **Total energy supply** | Energy unit, Mass, Volume | ▪ By energy product |
| c.  | **Final consumption of energy** | Energy unit, Mass, Volume | ▪ By households▪ By ISIC economic activity▪ By tourists▪ National▪ Sub-national |

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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.3: Land |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.3.1: Land use** | a. | **Area under land use categories** | Area | ▪ By type of land use (e.g., agriculture; forestry; land used for aquaculture; use of built-up and related areas; land used for maintenance and restoration of environmental functions; other uses of land not elsewhere classified; land not in use; inland waters used for aquaculture or holding facilities; inland waters used for maintenance and restoration of environmental functions; other uses of inland waters not elsewhere classified; inland water not in use; coastal waters (including area of coral reefs and mangroves); Exclusive Economic Zone (EEZ)) ▪ National▪ Sub-national | ▪ FAO▪ UNECE Standard Classification of Land Use (1989)▪ SEEA Central Framework (2012) Annex 1 |
| b. | Other aspects of land use |  | ▪ National▪ Sub-national  |  |
|   | 1. *Area of land under organic farming* | Area | ▪ FAO Inter-departmental Working Group on Organic Agriculture |
|   | 2. Area of land under irrigation | Area |   |
|   | 3. Area of land under sustainable forest management | Area | ▪ Forest Stewardship Council |
|   | 4. *Area of land under agroforestry* | Area |
| c. | Land ownership | Area | ▪ By ownership category▪ National▪ Sub-national | ▪ FAO |
| **Topic 2.3.2:****Use of forest land** | a. | Use of forest land |  | ▪ By forest type▪ National▪ Sub-national▪ By dominant tree species | ▪ FAO FRA▪ UNFF MAR▪ UNSD: MDG Indicator 7.1 Metadata▪ Montreal Process (Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests)▪ State of Europe's Forests (Forest Europe/UNECE-FAO Forestry and Timber Section) |
|  | 1. **Area deforested** | Area |
|  | 2. Area reforested | Area |
|  | 3. Area afforested | Area |
|  | 4. *Natural growth* | Area |
| b. | Forest area by primary designated function | Area | ▪ Production▪ Protection of soil and water▪ Conservation of biodiversity▪ Social services▪ Multiple use▪ Other | ▪ FAO FRA |

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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.4: Soil Resources |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.4.1: Soil resources** | Further research is needed to develop the necessary statistics in this topic. |
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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.5: Biological Resources |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.5.1: Timber resources** | a. | Timber resources  |   | ▪ By type (e.g., natural or planted)▪ National▪ Sub-national | ▪ SEEA Central Framework (2012)▪ FAO FRA▪ State of Europe's Forests (Forest Europe/UNECE-FAO Forestry and Timber Section)▪ UNECE/FAO Joint Working Party on Forest Statistics, Economics and Management▪ ISIC Rev. 4, Section A, Division 02▪ FAOSTAT database |
|   | 1. **Stocks of timber resources**  | Volume |
|   | 2. Natural growth | Volume |
|   | 3. Fellings | Volume |
|   | 4. Removals | Volume |
|   | 5. *Felling residues* | Volume |
|   | 6. *Natural losses* | Volume |
|   | 7. *Catastrophic losses* | Volume |
|   | 8. *Reclassifications* | Volume |
| b. | Amount used of: |  | ▪ National▪ Sub-national |
|   | 1. Fertilizers (also in 3.4.1.a)  | Area, Mass, Volume |
|   | 2. Pesticides(also in 3.4.1.b) | Area, Mass, Volume |
| c. | Forest production   | Volume | ▪ By type of product (e.g., timber, industrial roundwood, fuelwood, pulp, chips)▪ National▪ Sub-national | ▪ Central Product Classification (CPC)▪ Joint Forest Sector Questionnaire (UNECE/FAO/ Eurostat International Tropical Timber Organization [ITTO])▪ FAO/ITTO/ UNECE/Eurostat Inter-secretariat Working Group on Forest Sector Statistics▪ UNECE Timber Committee▪ UNECE/FAO Joint Working Party on Forest Statistics, Economics and Management▪ ISIC Rev. 4, Section A, Division 02▪ FAOSTAT database  |
| d. | Fuelwood production | Volume | ▪ National | ▪ FAO/ITTO/ UNECE/ Eurostat Inter-secretariat Working Group on Forest Sector Statistics▪ State of Europe's Forests (Forest Europe/UNECE-FAO Forestry and Timber Section)▪ HS 2012, Sections IX and X▪ FAOSTAT database |
| e. | Imports of forest products  | Currency, Mass, Volume | ▪ By type of product |
| f.  | Exports of forest products    | Currency, Mass, Volume |
| **Topic 2.5.2: Aquatic resources** | a. | **Fish capture production** | Mass | ▪ By relevant freshwater and marine species▪ National▪ Sub-national | ▪ FAO International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP)▪ ISIC Rev. 4, Section A, Division 03▪ The United Nations Convention on the Law of the Sea (UNCLOS)▪ UNSD: MDG Indicator 7.4 Metadata▪ HS 2012, Section I, Chapter 03▪ SEEA Central Framework (2012) |
| b. | **Aquaculture production**  | Mass |
| c. | Imports of fish and fishery products | Currency, Mass, Volume | ▪ By relevant freshwater and marine species▪ By type of product▪ By species |
| d. | Exports of fish and fishery products  | Currency, Mass, Volume |
| e. | Amount used of: |  | ▪ By type of water (i.e., marine or freshwater) ▪ National▪ Sub-national |
|   | 1. *Pellets* (also in 3.4.1.c) | Mass, Volume |
|   | 2. *Hormones* (also in 3.4.1.d) | Mass, Volume |
|   | 3. *Colourants* (also in 3.4.1.e) | Mass, Volume |
|   | 4. *Antibiotics* (also in 3.4.1.f) | Mass, Volume |
|   | 5. *Fungicides* | Mass, Volume |
| f. | Aquatic resources |  | ▪ By relevant freshwater and marine species▪ By type (e.g., natural or cultivated)▪ National▪ Sub-national  |
|   | 1. Stocks of aquatic resources  | Mass |
|   | 2. *Additions to aquatic resources* | Mass |
|   | 3. *Reductions in aquatic resources* | Mass |
| **Topic 2.5.3: Crops** | a. | Main annual and perennial crops |  | ▪ By crop▪ By size ▪ National▪ Sub-national  | ▪ FAO Indicative Crop Classification (for 2010 round of agricultural censuses)▪ FAO/WHO Specifications for Pesticides (2010)▪ FAO Specifications for Commonly Used Fertilizers (2009)▪ ISIC Rev. 4, Section A, Division 1▪ FAOSTAT database▪ HS 2012, Section II |
|   | 1. **Area planted**  | Area |
|   | 2. **Area harvested**  | Area |
|   | 3. **Amount produced**  | Mass |
|   | 4. *Amount of organic production* | Mass |
|   | 5. *Amount of genetically modified crops produced* | Mass |
| b. | Amount used of: |  | ▪ By type of fertilizer▪ By type of pesticide▪ By crop▪ National▪ Sub-national  |
|   | 1. **Natural fertilizers** (e.g., manure, compost, lime) (also in 3.4.1.a) | Area, Mass, Volume |
|   | 2. **Chemical fertilizers** (also in 3.4.1.a) | Area, Mass, Volume |
|   | 3. **Pesticides** (also in 3.4.1.b) | Area, Mass, Volume |
|   | 4. Genetically modified seeds | Mass | ▪ By crop▪ National▪ Sub-national |
| c. | Monoculture/resource-intensive farming systems |  | ▪ By crop▪ By size ▪ National▪ Sub-national  |
|   | 1. Area being used for production | Area |
|   | 2. Amount produced | Mass |
|   | 3. *Amount of genetically modified crops produced* | Mass |
| d. | Imports of crops | Currency, Mass |
| e. | Exports of crops | Currency, Mass |
| **Topic 2.5.4: Livestock** | a. | Livestock |  | ▪ By type of animal▪ National▪ Sub-national  | ▪ FAOSTAT database▪ ISIC Rev. 4, Section A, Division 01▪ HS 2012, Section I, Chapter 01 |
|   | 1. **Number of live animals** | Number |
|   | 2. Number of animals slaughtered | Number |
| b. | Amount used of: |  |
|   | 1. *Antibiotics* (also in 3.4.1.f) | Mass |
|   | 2. *Hormones* (also in 3.4.1.d) | Mass |
| c. | Imports of livestock  | Currency, Number |
| d. | Exports of livestock  | Currency, Number |
| **Topic 2.5.5: Other non-cultivated biological resources**  | a. | Permits for regulated hunting and trapping of wild animals  |  | ▪ By type of animal▪ By species | ▪ ISIC Rev. 4, Section A, Class 0170 |
|   | 1. Number of permits issued per year | Number |
|   | 2. Number of animal kills allowed by permits | Number |
| b. | Imports of endangered species  | Currency, Number | ▪ Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) |
| c. | Exports of endangered species  | Currency, Number |
| d. | *Reported wild animals killed or trapped for food or sale* | Number | ▪ ISIC Rev. 4, Section A, Class 0170 |
| e. | *Trade in wildlife and captive-bred species* | Description, Mass, Number | ▪ By status category▪ National▪ Sub-national  | ▪ CITES |
| f. | *Non-wood forest products and other plants* | Mass, Volume | ▪ By type of product▪ National▪ Sub-national | ▪ ISIC Rev. 4, Section A, Class 0230 |

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| **Component 2: Environmental Resources and their Use** |
|
| Sub-component 2.6: Water Resources |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 2.6.1: Water resources** | a. | Inflow of water to inland water resources |   | ▪ National▪ Sub-national▪ By territory of origin and destination | ▪ UNSD: IRWS▪ UNECE Standard Statistical Classification of Water Use (1989)▪ UNSD: MDG Indicator 7.5 Metadata▪ FAO AQUASTAT▪ SEEA Central Framework (2012) asset accounts▪ SEEA Water▪ UNSD: Environment Statistics Section-Water Questionnaire |
|   | 1. **Precipitation** (also in 1.1.1.b) | Volume |
|   | 2. **Inflow from neighbouring territories** | Volume |
|   | 3. *Inflow subject to treaties* | Volume |
| b. | Outflow of water from inland water resources |  |
|   | 1. **Evapotranspiration** | Volume |
|   | 2. Outflow to neighbouring territories | Volume |
|   | 3. Outflow subject to treaties | Volume |
|   | 4. Outflow to the sea | Volume |
| c. | Inland water stocks |  | ▪ National▪ Sub-national |
|   | 1. Surface water stocks in artificial reservoirs | Volume |
|   | 2. Surface water stocks in lakes | Volume |
|   | 3. *Surface water stocks in rivers and streams* | Volume |
|   | 4. *Surface water stocks in wetlands* | Volume |
|   | 5. *Surface water stocks in snow, ice and glaciers* | Volume |
|   | 6. Groundwater stocks | Volume |
| **Topic 2.6.2: Abstraction, use and returns of water** | a. | **Total water abstraction**  | Volume | ▪ By type of source▪ National▪ Sub-national | ▪ UNSD: IRWS▪ UNECE Standard Statistical Classification of Water Use (1989)▪ FAO AQUASTAT▪ SEEA Central Framework (2012)▪ SEEA Water▪ UNSD: Environment Statistics Section-Water Questionnaire |
| b. | **Water abstraction from surface water** | Volume |
| c. | Water abstraction from groundwater |  |
|   | 1. **From renewable groundwater resources**  | Volume |
|   | 2. **From non-renewable groundwater resources**  | Volume |
| d. | Water abstracted for own use  | Volume | ▪ By ISIC economic activity▪ National▪ Sub-national  |
| e. | Water abstracted for distribution | Volume |
| f. | Desalinated water | Volume | ▪ National▪ Sub-national |
| g. | Reused water | Volume |
| h. | Water use | Volume | ▪ By ISIC economic activity▪ By tourists▪ National▪ Sub-national |
| i. | *Rainwater collection*  | Volume | ▪ National▪ Sub-national |
| j. | *Water abstraction from the sea* | Volume |
| k. | Losses during transport | Volume | ▪ By ISIC economic activity▪ National▪ Sub-national |
| l. | *Exports of water* | Volume | ▪ National▪ Sub-national |
| m. | *Imports of water*  | Volume |
| n. | *Returns of water*  | Volume | ▪ By ISIC economic activity▪ By destination (e.g., inland water, land, sea, ocean) ▪ National▪ Sub-national |

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| **Component 3: Residuals** |
|
| Sub-component 3.1: Emissions to Air |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 3.1.1: Emissions of greenhouse gases** | a. | Total emissions of direct greenhouse gases (GHGs), by gas: |   | ▪ By ISIC economic activity▪ By tourists▪ National▪ Sub-national▪ By IPCC source categories | ▪ IPCC Emission Factor Database▪ UN Framework Convention on Climate Change (UNFCCC) Reporting Guidelines▪ UNECE Standard Statistical Classification of Ambient Air Quality (1990)▪ UNSD: MDG Indicator 7.2 Metadata▪ WHO |
|   | 1. **Carbon dioxide (CO2)** | Mass |
|   | 2. **Methane (CH4)** | Mass |
|   | 3. **Nitrous oxide (N2O)** | Mass |
|   | 4. Perfluorocarbons (PFCs) | Mass |
|   | 5. Hydrofluorocarbons (HFCs) | Mass |
|   | 6. Sulphur hexafluoride (SF6) | Mass |
| b. | Total emissions of indirect greenhouse gases (GHGs), by gas: |  |
|   | 1. **Sulphur dioxide (SO2)** | Mass |
|   | 2. **Nitrogen oxides (NOx)** | Mass |
|   | 3. Non-methane volatile organic compounds (NM-VOCs) | Mass |
|  | 4. Other | Mass |
| **Topic 3.1.2: Consumption of ozone depleting substances** | a. | Consumption of ozone depleting substances (ODSs), by substance: |  | ▪ UNEP Ozone Secretariat▪ IPCC Emission Factor Database▪ UNECE Standard Statistical Classification of Ambient Air Quality (1990)▪ UNSD: MDG Indicator 7.3 Metadata▪ WHO |
|   | 1. Chlorofluorocarbons (CFCs) | Mass |
|   | 2. Hydrochlorofluorocarbons (HCFCs) | Mass |
|   | 3. Halons | Mass |
|   | 4. Methyl chloroform | Mass |
|   | 5. Carbon tetrachloride | Mass |
|   | 6. Methyl bromide | Mass |
|  | 7. Other | Mass |
| **Topic 3.1.3: Emissions of other substances** | a. | Emissions of other substances: |  | ▪ UNECE Standard Statistical Classification of Ambient Air Quality (1990)▪ European Monitoring and Evaluation Programme (EMEP) under the Convention on Long-range Transboundary Air Pollution |
|   | 1. Particulate matter (PM) | Mass |
|   | 2. Heavy metals | Mass |
|   | 3. *Other* | Mass |

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| **Component 3: Residuals** |
|
| Sub-component 3.2: Generation and Management of Wastewater |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 3.2.1: Generation and pollutant content of wastewater** | a. | **Volume of wastewater generated** | Volume | ▪ By ISIC economic activity▪ By tourists▪ National▪ Sub-national | ▪ UNSD: IRWS▪ ISIC Rev. 4, Section E, Divisions 35-37▪ SEEA Water▪ UNSD: Environment Statistics Section-Water Questionnaire |
| b. | Pollutant content of wastewater | Mass | ▪ By pollutant or pollution parameter (e.g., biochemical oxygen demand (BOD), chemical oxygen demand (COD), nitrogen, phosphorous, total suspended solids (TSS))▪ By ISIC economic activity▪ National▪ Sub-national |
| **Topic 3.2.2: Collection and treatment of wastewater** | a. | **Volume of wastewater collected**  | Volume | ▪ National▪ Sub-national | ▪ UNSD: IRWS▪ ISIC Rev. 4, Section E, Division 35 and 36▪ UNSD: Environment Statistics Section-Water Questionnaire |
| b. | **Volume of wastewater treated** | Volume | ▪ By treatment type (e.g., primary, secondary, tertiary)▪ National▪ Sub-national |
| c. | Total urban wastewater treatment capacity |  |
|   | 1. Number of plants | Number |
|   | 2. Capacity of plants | Volume |
| d. | Total industrial wastewater treatment capacity |  |
|   | 1. Number of plants | Number |
|   | 2. Capacity of plants | Volume |
| **Topic 3.2.3: Discharge of wastewater to the environment** | a. | Wastewater discharge |  | ▪ By treatment type (e.g., primary, secondary, tertiary)▪ By recipient (e.g., surface water, groundwater, wetland, sea, land)▪ By ISIC economic activity▪ National▪ Sub-national▪ By source (point/non-point source) |
|   | 1. **Total volume of wastewater discharged to the environment after treatment** | Volume |
|   | 2. **Total volume of wastewater discharged to the environment without treatment**  | Volume |
| b. | Pollutant content of discharged wastewater | Mass | ▪ By pollutant or pollution parameter (e.g., BOD, COD, nitrogen, phosphorous)▪ National▪ Sub-national▪ Net emission by ISIC economic activity▪ By source (point/non-point source)  |

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| **Component 3: Residuals** |
|
| Sub-component 3.3: Generation and Management of Waste |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 3.3.1: Generation of waste** | a. | **Amount of waste generated by source** | Mass | ▪ By ISIC economic activity▪ By households▪ By tourists▪ National▪ Sub-national | ▪ European Commission: European List of Waste, pursuant to European Waste Framework Directive▪ Eurostat: Environmental Data Centre on Waste▪ Eurostat: European Waste Classification for Statistics (EWC-Stat), version 4 (Waste categories) ▪ Basel Convention: Waste categories and hazardous characteristics▪ Eurostat: Manual on Waste Statistics▪ Eurostat: Guidance on classification of waste according to EWC-Stat categories▪ SEEA Central Framework (2012)▪ UNSD: Environment Statistics Section-Waste Questionnaire |
| b. | Amount of waste generated by waste category   | Mass | ▪ By waste category (e.g., chemical waste, municipal waste, food waste, combustion waste)▪ National▪ Sub-national |
| c. | **Amount of hazardous waste generated**   | Mass | ▪ By ISIC economic activity▪ National▪ Sub-national |
| **Topic 3.3.2: Management of waste** | a. | Municipal waste |  | ▪ By type of treatment and disposal (e.g., reuse, recycling, composting, incineration, landfilling, other)▪ By type of waste, when possible▪ National▪ Sub-national | ▪ Eurostat: Environmental Data Centre on Waste▪ Eurostat metadata: Organisation for Economic Co-operation and Development (OECD)/Eurostat definition of municipal waste▪ UNSD: Environment Statistics Section-Waste Questionnaire▪ Basel Convention: Waste categories and hazardous characteristics▪ Eurostat: EWC-Stat, version 4 (Waste categories)▪ European Commission: European Waste Framework Directive (Waste treatment operations) ▪ Eurostat: Manual on Waste Statistics▪ Eurostat: Guidance on classification of waste according to EWC-Stat categories▪ Rotterdam Convention |
|   | 1. **Total municipal waste collected** | Mass |
|   | 2. **Amount of municipal waste treated by type of treatment and disposal** | Mass |
|   | 3. **Number of municipal waste treatment and disposal facilities** | Number |
|   | 4. Capacity of municipal waste treatment and disposal facilities | Volume |
| b. | Hazardous waste  |  |
|   | 1. **Total hazardous waste collected** | Mass |
|   | 2. **Amount of hazardous waste treated by type of treatment and disposal** | Mass |
|   | 3. **Number of hazardous waste treatment and disposal facilities** | Number |
|   | 4. Capacity of hazardous waste treatment and disposal facilities | Volume |
| c. | Other/industrial waste |  |
|   | 1. Total other/industrial waste collected | Mass |
|   | 2. Amount of other/industrial waste treated by type of treatment and disposal | Mass |
|   | 3. Number of other/industrial treatment and disposal facilities | Number |
|   | 4. Capacity of other/industrial waste treatment and disposal facilities  | Volume |
| d. | **Amount of recycled waste** | Mass | ▪ By specific waste streams (e.g., e-waste, packaging waste, end of life vehicles)▪ By waste category▪ National▪ Sub-national |
| e. | Imports of waste | Mass | ▪ By waste category (e.g., chemical waste, municipal waste, combustion waste) |
| f. | Exports of waste | Mass |
| g. | Imports of hazardous waste | Mass |
| h. | Exports of hazardous waste | Mass |

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| **Component 3: Residuals** |
|
| Sub-component 3.4: Release of Chemical Substances |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 3.4.1: Release of chemical substances** | a. | Total amount of fertilizers used  |  | ▪ National▪ Sub-national▪ By ISIC economic activity (forestry, agriculture)▪ By type of fertilizer▪ By type of pesticide | ▪ FAOSTAT database▪ Stockholm Convention |
|  | 1. Natural fertilizers (also in 2.5.1.b and 2.5.3.b) | Area, Mass, Volume |
|  | 2. Chemical fertilizers (also in 2.5.1.b and 2.5.3.b) | Area, Mass, Volume |
| b. | Total amount of pesticides used (also in 2.5.1.b and 2.5.3.b) | Area, Mass, Volume |
| c. | *Total amount of pellets used* (also in 2.5.2.e) | Mass, Volume | ▪ National▪ Sub-national▪ By ISIC economic activity (aquaculture) | ▪ Stockholm Convention |
| d. | *Total amount of hormones used* (also in 2.5.2.e and 2.5.4.b) | Mass, Volume | ▪ National▪ Sub-national▪ By ISIC economic activity (aquaculture, livestock production) |
| e. | *Total amount of colourants used* (also in 2.5.2.e) | Mass, Volume | ▪ National▪ Sub-national▪ By ISIC economic activity (aquaculture) |
| f. | *Total amount of antibiotics used* (also in 2.5.2.e and 2.5.4.b) | Mass, Volume | ▪ National▪ Sub-national▪ By ISIC economic activity (aquaculture, livestock production) |

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| **Component 4: Extreme Events and Disasters** |
|
| Sub-component 4.1: Natural Extreme Events and Disasters |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 4.1.1: Occurrence of natural extreme events and disasters** | a. | Occurrence of natural extreme events and disasters  |   | ▪ By event▪ National▪ Sub-national | ▪ Centre for Research on the Epidemiology of Disasters Emergency Events Database (CRED EMDAT)▪ UN Economic Commission for Latin America and the Caribbean (UNECLAC) Handbook for Estimating the Socio-economic and Environmental Effects of Disasters▪ The United Nations Office for Disaster Risk Reduction (UNISDR) |
|   | 1. **Type of natural extreme event and disaster** (geophysical, meteorological, hydrological, climatological, biological) | Description |
|   | 2. **Location** | Location |
|   | 3. Magnitude (where applicable) | Intensity |
|   | 4. Date of occurrence | Date |
|   | 5. Duration | Time period |
| **Topic 4.1.2: Impact of natural extreme events and disasters** | a. | People affected by natural extreme events and disasters |  |
|   | 1. **Number of people killed** | Number |
|   | 2. Number of people injured | Number |
|   | 3. Number of people homeless | Number |
|   | 4. Number of people affected | Number |
| b. | **Economic losses due to natural extreme events and disasters** (e.g., damage to buildings, transportation networks, loss of revenue for businesses, utility disruption) | Currency | ▪ By event▪ By ISIC economic activity▪ National▪ Sub-national▪ By direct and indirect damage  |
| c. | Physical losses/damages due to natural extreme events and disasters (e.g., area and amount of crops, livestock, aquaculture, biomass) | Area, Description, Number |
| d. | Effects of natural extreme events and disasters on integrity of ecosystems |  | ▪ By event▪ By ecosystem▪ National▪ Sub-national |  |
|   | 1. *Area affected by natural disasters*  | Area |
|   | 2. *Loss of vegetation cover* | Area |
|   | 3. *Area of watershed affected* | Area |
|   | 4. *Other* | Description |
| e. | *External assistance received* | Currency | ▪ By event▪ National |  |
| **Component 4: Extreme Events and Disasters** |
|
| Sub-component 4.2: Technological Disasters |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| **(Bold Text - Core Set/Tier 1;** Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 4.2.1: Occurrence of technological disasters**  | a. | Occurrence of technological disasters  |   | ▪ By event▪ By ISIC economic activity▪ National▪ Sub-national | ▪ CRED EMDAT▪ UNECLAC: Handbook for Estimating the Socio-economic and Environmental Effects of Disasters |
|   | 1. Type of technological disaster (industrial, transportation, miscellaneous) | Description |
|   | 2. *Location* | Location |
|   | 3. *Date of occurrence* | Date |
|   | 4. *Duration* | Time period |
| **Topic 4.2.2: Impact of technological disasters**  | a. | People affected by technological disasters |  | ▪ By event▪ National▪ Sub-national |
|   | 1. Number of people killed | Number |
|   | 2. *Number of people injured* | Number |
|   | 3. *Number of people homeless* | Number |
|   | 4. *Number of people affected* | Number |
| b. | Economic losses due to technological disasters (e.g., damage to buildings, transportation networks, loss of revenue for businesses, utility disruption) | Currency | ▪ By event▪ By ISIC economic activity▪ National▪ Sub-national▪ By direct and indirect damage |
| c. | Physical losses/damages due to technological disasters (e.g., area and amount of crops, livestock, aquaculture, biomass) | Area, Description, Number |
| d. | Effects of technological disasters on integrity of ecosystems |  | ▪ By event▪ National▪ Sub-national |
|   | 1. *Area affected by technological disasters* | Area |
|   | 2. *Loss of vegetation cover* | Area |
|   | 3. *Area of watershed affected* | Area |
|   | 4. *Other* (e.g., for oil spills: volume of oil released into the environment, impact on ecosystem) | Description |
| e. | *External assistance received* | Currency | ▪ By event▪ National |
| **Component 5: Human Settlements and Environmental Health** |
|
| Sub-component 5.1: Human Settlements |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 5.1.1: Urban and rural population** | a. | Population living in urban areas | Number | ▪ Urban▪ Rural | ▪ UN Population Division▪ UN Population Fund (UNFPA) |
| b. | Population living in rural areas | Number |
| c. | Total urban area | Area |
| d. | Total rural area | Area |
| e. | Population living in coastal areas | Number |
| **Topic 5.1.2: Access to selected basic services** | a. | **Population using an improved drinking water source** | Number | ▪ Urban▪ Rural▪ National▪ Sub-national | ▪ UNSD: MDG Indicator 7.8 and 7.9 Metadata▪ UN-Water▪ UNSD: Environment Statistics Section- Water and Waste Questionnaire▪ WHO/(United Nations Children's Fund (UNICEF) Joint Monitoring Programme for Water Supply and Sanitation |
| b. | **Population using an improved sanitation facility** | Number |
| c. | **Population served by municipal waste collection** | Number |
| d. | *Population connected to wastewater collecting system* | Number | ▪ By treatment type (e.g., primary, secondary, tertiary)▪ National▪ Sub-national | ▪ UNSD: IRWS▪ ISIC Rev. 4, Section E, Division 35-37▪ UNSD: Environment Statistics Section-Water Questionnaire |
| e. | **Population connected to wastewater treatment** | Number |
| f. | **Population supplied by water supply industry** | Number | ▪ National▪ Sub-national |
| g. | Price of water | Currency |  ▪ By source (e.g., piped, vendor) |   |
| h. | Population with access to electricity | Number |  |  |
| i. | Price of electricity | Currency |  |  |
| **Topic 5.1.3: Housing conditions** | a. | Urban population living in slums | Number |  | ▪ UN Habitat▪ UNSD: MDG Indicator 7.10 Metadata |
| b. | Area of slums | Area |  |
| c. | Population living in hazard-prone areas | Number | ▪ Urban▪ Rural▪ National▪ Sub-national |
| d. | Hazard-prone areas | Area |
| e. | *Population living in informal settlements* | Number |
| f. | *Homeless population* | Number |
| g. | *Number of dwellings with adequacy of building materials defined by national or local standards* | Number |
| **Topic 5.1.4: Exposure to ambient pollution** | a. | Population exposed to air pollution in main cities | Number | ▪ By pollutant (e.g., SO2, NOx, O3) | ▪ WHO |
| b. | *Population exposed to noise pollution in main cities* | Number |   |
| **Topic 5.1.5: Environmental concerns specific to urban settlements** | a. | Extent of urban sprawl  | Area |   | ▪ UN Habitat▪ WHO▪ UNEP Urban Environment Unit |
| b. | Available green spaces | Area |   |
| c. | **Number of private and public vehicles** | Number | ▪ By type of engine or type of fuel |
| d. | Population using public modes of transportation | Number |   |
| e. | *Population using hybrid and electric modes of transportation* | Number |   |
| f. | Extent of roadways  | Length |   |
| g. | *Existence of urban planning and zoning regulations and instruments in main cities* | Description |   |
| h. | *Effectiveness of urban planning and zoning regulations and instruments in main cities* | Description |   |

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| **Component 5: Human Settlements and Environmental Health** |
|
| Sub-component 5.2: Environmental Health |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 5.2.1: Airborne diseases and conditions**  | a. | Airborne diseases and conditions |   | ▪ By disease or condition▪ National▪ Sub-national▪ Urban▪ Rural▪ By gender▪ By age group▪ By time period | ▪ WHO |
|   | 1. Incidence | Number |
|   | 2. Prevalence | Number |
|  | 3. Mortality  | Number |
|   | 4. *Loss of work days* | Number |
|   | 5. *Estimates of economic cost in monetary terms* | Currency |
| **Topic 5.2.2: Water-related diseases and conditions** | a. | Water-related diseases and conditions |  |
|   | 1. **I****ncidence** | Number |
|   | 2. **Prevalence** | Number |
|   | 3. **Mortality** | Number |
|   | 4. *Loss of work days*  | Number |
|   | 5. *Estimates of economic cost in monetary terms* | Currency |
| **Topic 5.2.3: Vector-borne diseases** | a. | Vector-borne diseases |  |
|   | 1. **Incidence** | Number |
|   | 2. **Prevalence** | Number |
|   | 3. **Mortality** | Number |
|   | 4. *Loss of work days*  | Number |
|   | 5. *Estimates of economic cost in monetary terms* | Currency |
| **Topic 5.2.4: Health problems associated with excessive UV radiation exposure**  | a. | Problems associated with excessive UV radiation exposure |  |
|   | 1. *Incidence* | Number |
|   | 2. *Prevalence* | Number |
|   | 3. *Loss of work days*  | Number |
|  | 4. *Estimates of economic cost in monetary terms* | Currency |
| **Topic 5.2.5: Toxic substance- and nuclear radiation-related diseases and conditions**  | a. | Toxic substance-and nuclear radiation-related diseases and conditions |  | ▪ By category of toxic substance▪ By disease or condition▪ National▪ Sub-national▪ Urban▪ Rural▪ By gender▪ By age group | ▪ WHO |
|   | 1. Incidence | Number |
|   | 2. Prevalence | Number |
|   | 3. *Loss of work days* | Number |
|   | 4. *Estimates of economic cost in monetary terms* | Currency |

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| **Component 6: Environmental Protection, Management and Engagement** |
|
| Sub-component 6.1: Environmental Protection and Resource Management Expenditure |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 6.1.1: Government environmental protection and resource management expenditure** | a. | Government environmental protection and resource management expenditure |   | ▪ By environmental activity▪ By type of expenditure: current, investment▪ By ministry▪ National▪ Sub-national▪ By funding | ▪ Eurostat-SERIEE Environmental Protection Expenditure Accounts Compilation Guide (2002)▪ Eurostat-Environmental expenditure Statistics. General Government and Specialised Producers Data Collection Handbook (2007)▪ Classification of Environmental Activities (CEA)▪ SEEA Central Framework (2012) Annex 1 |
|   | 1. **Annual government environmental protection expenditure** | Currency |
|  | 2. Annual government resource management expenditure | Currency |
| **Topic 6.1.2: Corporate, non-profit institution and household environmental protection and resource management expenditure** | a. | Private sector environmental protection and resource management expenditure |  | ▪ By environmental activity▪ By type of expenditure: current, investment▪ By ISIC economic activity▪ National▪ Sub-national | ▪ Eurostat-Environmental expenditure statistics. Industry data collection handbook (2005)▪ Eurostat-Environmental expenditure Statistics. General Government and Specialised Producers Data Collection Handbook (2007)        |
|   | 1. Annual corporate environmental protection expenditure | Currency |
|   | 2. *Annual corporate resource management expenditure* | Currency |
|   | 3. *Annual non-profit institution environmental protection expenditure* | Currency |
|   | 4. *Annual non-profit institution resource management expenditure* | Currency |
|   | 5. *Annual household environmental protection expenditure* | Currency |
|   | 6. *Annual household resource management expenditure*  | Currency |

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| **Component 6: Environmental Protection, Management and Engagement** |
|
| Sub-component 6.2: Environmental Governance and Regulation |
| **Topic** | **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
| (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 6.2.1: Institutional strength** | a. | Government environmental institutions and their resources |   | ▪ National▪ Sub-national  |               |
|   | 1. Name of main environmental authority and year of establishment | Description |
|   | 2. Annual budget of the main environmental authority | Currency |
|   | 3. Number of staff in the main environmental authority | Number |
|   | 4. List of environmental departments in other authorities and year of establishment | Description |
|   | 5. Annual budget of environmental departments in other authorities | Currency |
|   | 6. Number of staff of environmental departments in other authorities | Number |
| b. | Other environmental institutions and their resources |  |
|   | 1. Name of institution and year of establishment | Description |
|   | 2. Annual budget of the institution | Currency |
|   | 3. Number of staff in the institution | Number |
| **Topic 6.2.2: Environmental regulation and instruments** | a. | Direct regulation |  | ▪ By media (e.g., water, air, land, soil, oceans)▪ By ISIC economic activity▪ National▪ Sub-national  |
|   | 1. **List of regulated pollutants and description** (e.g., by year of adoption and maximum allowable levels) | Description, Number |
|   | 2. Description (e.g., name, year established) of licensing system to ensure compliance with environmental standards for businesses or other new facilities | Description |
|   | 3. Number of applications for licences received and approved per year  | Number |
|   | 4. List of quotas for biological resource extraction | Number |
|    | 5. Budget and number of staff dedicated to enforcement of environmental regulations | Currency, Number |
| b. | Economic instruments |  |
|   | 1. *List and description* (e.g., year of establishment) *of green/environmental taxes*  | Description, Currency |
|   | 2. *List and description* (e.g., year of establishment) *of environmentally relevant subsidies*  | Description, Currency |
|   | 3. *List of eco-labelling and environmental certification programmes*  | Description |
|   | 4. Emission permits traded  | Number, Currency |
| **Topic 6.2.3: Participation in MEAs and environmental conventions** | a. | Participation in MEAs and other global environmental conventions |  |   | ▪ MEA Secretariats |
|  | 1. **List and description** (e.g., country’s year of participation(d)) **of MEAs and other global environmental conventions** | Description, Number |   |   |
| (d)Participation means that the country or area has become party to the agreements under the treaty or convention, which is achieved through various means depending on the country’s circumstances, namely: accession, acceptance, approval, formal confirmation, ratification and succession. Countries or areas that have signed but not become party to the agreements under a given convention or treaty are not considered to be participating. |

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| **Component 6: Environmental Protection, Management and Engagement** |
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| Sub-component 6.3: Extreme Event Preparedness and Disaster Management |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 6.3.1: Preparedness for natural extreme events and disasters** | a. | National natural extreme event and disaster preparedness and management systems |   | ▪ National▪ Sub-national | ▪ International Emergency Management Organization (IEMO)▪ UNISDR▪ Hyogo Framework for Action |
|   | 1. Existence of national disaster plans/programmes | Description |
|   | 2. Description (e.g., number of staff) of national disaster plans/programmes | Description |
|   | 3. Number and type of shelters in place or able to be deployed | Description, Number |
|   | 4. *Number and type of internationally certified emergency and recovery management specialists* | Description, Number |
|   | 5. *Number of volunteers*  | Number |
|   | 6. *Quantity of first aid, emergency supplies and equipment stockpiles* | Number |
|   | 7. *Existence of early warning systems for all major hazards* | Description |
|   | 8. *Expenditure on disaster prevention, preparedness, clean-up and rehabilitation* | Currency |
| **Topic 6.3.2: Preparedness for technological disasters**  | a. | National technological disaster preparedness and management systems |  |
|    | 1. *Existence and description* (e.g., number of staff) *of public disaster management plans/programmes (and private when available)* | Description |
|   | 2. *Expenditure on disaster prevention, preparedness, clean-up and rehabilitation* | Currency |

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| **Component 6: Environmental Protection, Management and Engagement** |
|
| Sub-component 6.4: Environmental Information and Awareness |
| **Topic** |  **Statistics and Related Information** | **Category of Measurement** | **Potential Aggregations and Scales** | **Methodological Guidance** |
|  (**Bold Text - Core Set/Tier 1**; Regular Text - Tier 2; *Italicized Text - Tier 3*) |
| **Topic 6.4.1: Environmental information** | a. | Environmental information systems |   | ▪ National▪ Sub-national  |                     |
|   | 1. Existence of publicly accessible environmental information system  | Description |
|   | 2. Annual number of visits/users of specific environmental information programmes or environmental information systems | Number |
| b. | Environment statistics |  |
|   | 1. Description of national environment statistics programmes (e.g., existence, year of establishment, lead agency, human and financial resources) | Description |
|   | 2. *Number and type of environment statistics products and periodicity of updates* | Description, Number |
|   | 3. Existence and number of participant institutions in inter-agency environment statistics platforms or committees | Number |
| **Topic 6.4.2: Environmental education** | a. | Environmental education |  |
|    | 1. *Allocation of resources by central and local authorities for environmental education* | Currency |
|   | 2. *Number and description of environmental education programmes in schools* | Description, Number |
|  | 3. *Number of students pursuing environment-related higher education* (e.g., science, management, education, engineering) | Number |
| **Topic 6.4.3: Environmental perception and awareness** | a. | Public environmental perception and awareness |  |
|   | 1. *Knowledge and attitudes about environmental issues or concerns* | Description |
|   | 2. *Knowledge and attitudes about environmental policies* | Description |
| **Topic 6.4.4: Environmental engagement** | a. | Environmental engagement |  |
|   | 1. Existence of pro-environmental NGOs (number of NGOs and their respective human and financial resources) | Currency, Number |
|   | 2. *Number of pro-environmental activities* | Number |
|   | 3. *Number of pro-environmental programmes* | Number |