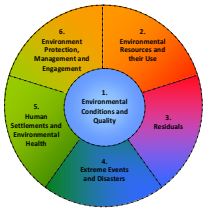


Environment and Energy Statistics Workshop for the Arab Region

Handout 2: Classification and groupings used in Environment Statistics

Source: FDES 2013 Annex D

D.1 This annex provides supporting material for the most important and widely-used classifications, categories and other groupings relevant to the field of environment statistics. None of these should be considered as mandatory for reporting purposes.

D.2 Considerable work has been done by FAO and partner agencies including UNEP and the EEA in the development of land cover and land use classifications. After a comprehensive global consultation process, a classification composed of 14 classes has been developed in the SEEA Central Framework.[1] These 14 classes have been generated using the LCCS, version 3 approach, created by FAO, and thus provide a comprehensive set of land cover types, mutually exclusive and unambiguous, with clear boundaries and systematic definitions.

Table D.1: SEEA Land Cover Classification based on FAO LCCS (Interim)

1 Artificial surfaces (including urban and associated areas)
2 Herbaceous crops
3 Woody crops
4 Multiple or layered crops
5 Grassland
6 Tree covered areas
7 Mangroves
8 Shrub covered areas
9 Shrubs and/or herbaceous vegetation, aquatic or regularly flooded
10 Sparsely natural vegetated areas
11 Terrestrial barren land
12 Permanent snow and glaciers
13 Inland water bodies
14 Coastal water bodies and inter-tidal areas

D.3 A reference framework for the classification of land use is provided in the SEEA Central Framework[2] as agreed after a comprehensive global consultation process. The development of the land use classification included in the SEEA, led by FAO, has been based on practices

[1] United Nations, 2012. "System of Environmental-Economic Accounting". White cover publication, pre-edited text subject to official editing. Available from https://unstats.un.org/unsd/envaccounting/White_cover.pdf (accessed 20 December 2012).
[2] United Nations, *op. cit.*

already in use in major international and national land use databases adjusted to meet the different needs which have arisen during the global consultation process on this issue.

Table D.2: SEEA Classification of Land Use (Interim)

1. Land		
1.1 Agriculture	1.1.1 Land under temporary crops	1.1.1.1 Cereals
		1.1.1.2 Vegetables and melons
		1.1.1.3 Temporary oilseed crops
		1.1.1.4 Root/tuber crops with high starch or inulin content
		1.1.1.5 Temporary spice crops
		1.1.1.6 Leguminous crops
		1.1.1.7 Sugar crops
		1.1.1.8 Other temporary crops
	1.1.2 Land under temporary meadows and pastures	
	1.1.3 Land with temporary fallow	
	1.1.4 Land under permanent crops	1.1.4.1 Fruit and nuts
		1.1.4.2 Permanent oilseed crops
		1.1.4.3 Beverage and permanent spice crops
		1.1.4.4 Other permanent crops
	1.1.5 Land under permanent meadows and pastures	1.1.5.1 Cultivated permanent meadows and pastures
		1.1.5.2 Naturally grown permanent meadows and pastures
	1.1.6 Agricultural land under protective cover	
1.2 Forestry	1.2.1 Forest land	1.2.1.1 Primary regenerated forest
		1.2.1.2 Other naturally regenerated forest
		1.2.1.3 Planted forest
	1.2.2 Other wooded land	
1.3 Land use for aquaculture	1.3.1 Land use for hatcheries	
	1.3.2 Managed grow-out sites on land	
1.4 Use of built up and related areas	1.4.1 Mining and quarrying	
	1.4.2 Construction	
	1.4.3 Manufacturing	
	1.4.4 Technical infrastructure	
	1.4.5 Transport and storage	
	1.4.6 Commercial, financial, and public services	
	1.4.7 Recreational facilities	
	1.4.8 Residential	
1.5 Land used for maintenance and restoration of environmental functions		
1.6 Other uses of land, n.e.c		
1.7 Land not in use		
2. Inland waters		
2.1 Inland waters used for aquaculture or holding facilities		
2.2 Inland waters used for maintenance and restoration of environmental functions		
2.3 Other uses of inland waters n.e.c.		
2.4 Inland waters not in use		

3. Coastal waters
3.1 Coastal waters used for aquaculture or holding facilities
3.2 Coastal waters used for maintenance and restoration of environmental functions
3.3 Other uses of coastal waters n.e.c.
3.4 Coastal waters not in use
4. Exclusive Economic Zone (EEZ)
4.1 EEZ areas used for aquaculture or holding facilities
4.2 EEZ areas used for maintenance and restoration of environmental functions
4.3 Other uses of EEZ areas n.e.c
4.4 EEZ areas not in use

D.4 The CEPA has been in place since 2000, covering the classes of activities pertaining to environment protection. Subsequent work to develop an overarching CEA that incorporates the CEPA and an interim listing of resource management activities has been undertaken. The CEA classification has been developed as part of the SEEA Central Framework.[3]

Table D.3: Classification of Environmental Activities

I. Environmental Protection		
1. Protection of ambient air and climate	1.1 Prevention of pollution through in-process modifications	1.1.1 for the protection of ambient air
		1.1.2 for the protection of climate and ozone layer
	1.2 Treatment of exhaust gases and ventilation air	1.2.1 for the protection of ambient air
		1.2.2 for the protection of climate and ozone layer
	1.3 Measurement, control, laboratories and the like	
	1.4 Other activities	
2. Wastewater management	2.1 Prevention of pollution through in-process modifications	
	2.2 Sewerage networks	
	2.3 Wastewater treatment	
	2.4 Treatment of cooling water	
	2.5 Measurement, control, laboratories and the like	
	2.6 Other wastewater management activities	
3. Waste management	3.1 Prevention of pollution through in-process modifications	
	3.2 Collection and transport	
	3.3 Treatment and disposal of hazardous waste	3.3.1 Thermal treatment
		3.3.2 Landfill
		3.3.3 Other treatment and disposal
	3.4 Treatment and disposal of non-hazardous waste	3.4.1 Incineration
		3.4.2 Landfill
		3.4.3 Other treatment and disposal
	3.5 Measurement, control, laboratories and the like	
	3.6 Other waste management activities	
4. Protection and remediation of	4.1 Prevention of pollutant infiltration	
	4.2 Cleaning up of soil and water bodies	

[3] United Nations, *op. cit.*

	4.3 Protection of soil from erosion and other physical degradation	
	4.4 Prevention and remediation of soil salinity	
	4.5 Measurement, control, laboratories and the like	
	4.6 Other activities	
5. Noise and vibration abatement (excluding workplace protection)	5.1 Preventive in-process modifications at the source	5.1.1 Road and rail traffic
		5.1.2 Air traffic
		5.1.3 Industrial and other noise
	5.2 Construction of anti noise/vibration facilities	5.2.1 Road and rail traffic
		5.2.2 Air traffic
		5.2.3 Industrial and other noise
	5.3 Measurement, control, laboratories and the like	
	5.4 Other activities	
6. Protection of biodiversity and landscapes	6.1 Protection and rehabilitation of species and habitats	
	6.2 Protection of natural and semi-natural landscapes	
	6.3 Measurement, control, laboratories and the like	
	6.4 Other activities	
7. Protection against radiation (excluding external safety)	7.1 Protection of ambient media	
	7.2 Transport and treatment of high level radioactive waste	
	7.3 Measurement, control, laboratories and the like	
	7.4 Other activities	
8. Research and development for environmental protection	8.1 Protection of ambient air and climate	8.1.1 Protection of ambient air
		8.1.2 Protection of atmosphere and climate
	8.2 Protection of water	
	8.3 Waste	
	8.4 Protection of soil and groundwater	
	8.5 Abatement of noise and vibration	
	8.6 Protection of species and habitats	
	8.7 Protection against radiation	
	8.8 Other research on the environment	
9. Other environmental protection activities	9.1 General environmental administration and management	9.1.1 General administration, regulation and the like
		9.1.2 Environmental management
	9.2 Education, training and information	
	9.3 Activities leading to indivisible expenditure	
	9.4 Activities n.e.c.	
II. Resource management (Interim)		
10. Management of mineral and energy resources	10.1 Reduction of the intake of mineral and energy resources	
	10.2 Reduction of minerals use through the reduction of scraps and the production and consumption of recycled materials and products and reduction of heat and energy losses and energy savings	
	10.3 Measurement, control, laboratories and the like related to mineral and energy resources	

	10.4 Other activities for the management of mineral and energy resources	
11. Management of timber resources	11.1 Reduction of the intake of timber resources	
	11.2 Reduction of the consumption of forest (wood and non wood)-related products	
	11.3 Reforestation and afforestation	
	11.4 Forest fires	
	11.5 Measurement, control, laboratories and the like related to natural timber resources	
	11.6 Other activities for the management of timber resources	
12. Management of aquatic resources	12.1 Reduction of the intake of aquatic resources	
	12.2 Replenishment of aquatic resources stocks	
	12.3 Measurement, control, laboratories and the like related to aquatic resources	
	12.4 Other activities for the management of aquatic resources	
13. Management of other biological resources (excl. timber and aquatic resources)	13.1 Reduction of the intake of biological resources (excl. timber and aquatic resources)	
	13.2 Replenishment of biological resources stocks (excl. timber and aquatic resources)	
	13.3 Measurement, control, laboratories and the like related to biological resources stocks (excl. timber and aquatic resources)	
	13.4 Other activities for the management of biological resources (excl. timber and aquatic resources)	
14. Management of water resources	14.1 Reduction of the intake of water resources	
	14.2 Reduction of water losses and leaks, water reuse and savings	
	14.3 Replenishment of water resources	
	14.4 Measurement, control, laboratories and the like related to water resources	
	14.5 Other activities for the management of water resources	
15. Research and development activities for resource management	15.1 Mineral and energy resources	
	15.2 Timber resources	
	15.3 Aquatic resources	
	15.4 Other biological resources	
	15.5 Water resources	
	15.6 Other R&D activities for natural resource management	
16. Other resource management activities	16.1 General administration of natural resources	16.1.1 General administration, regulation and the like
		16.1.2 Environmental management
	16.2 Education, training and information	
	16.3 Activities leading to indivisible expenditure	
	16.4 Activities n.e.c.	

D.5 Environment statistics classifications developed and adopted by the Statistical Division of the UNECE between 1989 and 1996 have been used extensively for international data collection. The UNECE environment statistics classifications are heterogeneous and are not pure classifications in the traditional sense; most of them include more than one single hierarchical

classification. They also include recommendations for definitions, measurement methods and tabulations. These classifications include:

i. UNECE Standard Statistical Classification of Water Use (1989);
ii. UNECE Standard Statistical Classification of Marine Water Quality (1992) – See Table D.4;
iii. UNECE Standard Statistical Classification of Surface Freshwater Quality for the Maintenance of Aquatic Life (1992) – See Table D.5;
iv. UNECE Standard Statistical Classification of Land Use (1989);
v. UNECE Standard Statistical Classification of Wastes (1989);
vi. UNECE Standard Statistical Classification of Ambient Air Quality (1990) – See Table D.6;
vii. UNECE Standard Statistical Classification of Flora, Fauna and Biotopes (1996); and
viii. Single European Standard Statistical Classification of Environment Protection Activities and Facilities (1994).

Many of these classifications have been revised and taken over to be included in more recent classifications such as those on land cover, land use and environment protection activities (see Tables D.1-3). The following Tables 4-6 contain the UNECE classifications that are still in use in environment statistics and have global relevance.

Table D.4: UNECE Standard Statistical Classification of Marine Water Quality (1992)

Oxygen regime *Major criteria: Oxygen content in marine bottom waters*	Class interpretation: Class I: Excellent oxygen conditions for the maintenance of aquatic life. Class II: Good oxygen conditions for the maintenance of aquatic life Class III: Slight oxygen deficiencies cause occasional formation of hydrogen sulphide. Class IV: Chronic deficiencies of oxygen and frequent occurrence of hydrogen sulphide impair reproduction and cause other sublethal chronic impacts to aquatic life. Class V: Frequent oxygen depletion leads to toxic levels of hydrogen sulphide with acute sublethal or lethal effects for aquatic life.
Eutrophication *Major criteria: Trophic state of marine surface water and the best available expert judgement regarding the impact of trophic state on aquatic life.*	Class interpretation: Class I: Oligotrophic Class II: Mesothrophic Class III: Slightly eutrophic Class IV: Strongly eutrophic Class V: Hypertrophic
	Class interpretation:

Pollution by harmful substances *Major criteria: Toxicological impact on aquatic life as established by US-EPA.*	Class I: Approximate natural level or very low background contamination. Class II: [To be determined in accordance with the absence of observable effects ('no observable effects') on aquatic life.] Class III: [To be determined in accordance with occurrence of lowest observable effects on aquatic life, not exceeding threshold levels in species.] Class IV: Chronic toxicity Class V: Acute toxicity <u>Class interpretation:</u>
Pollution by radioactivity *Major criteria: [To be determined]*	[To be determined]

Table D.5: UNECE Standard Statistical Classification of Surface Freshwater Quality for the Maintenance of Aquatic Life (1992)

Oxygen regime *Oxygen content, together with presence of oxygen-demanding substances, and the impact of oxygen content levels on aquatic life*	<u>Class interpretation:</u> Class I: Constant near-saturation of oxygen content. Insignificant presence of oxygen demanding substances from the point of view of aquatic life. Class II: The oxygen saturation of water is good. Oxygen demanding substances do not normally disturb oxygen saturation. Class III: Oxygen deficiencies may occur in the hypolimnion. The presence of oxygen-demanding substances risks sometimes considerable negative impacts on aquatic life through the reduction of oxygen content. Class IV: Oversaturation of oxygen or oxygen deficiency occur in the epilimnion and oxygen deficiencies are frequent in the hypolimnion, possibly owing to chronic problems with the presence of oxygen- demanding substances. Class V: Acute problems occur in oxygen regime, i.e. oversaturation or oxygen deficiency in the epilimnion, and oxygen deficiency leading to anaerobic conditions in the hypolimnion. The high level of presence of oxygen-demanding substances may equally cause acute oxygen deficiencies.
Eutrophication *Major criteria: Trophic state and best available expert judgement regarding the*	<u>Class interpretation:</u> Class I: Clear, oligotrophic water with, at most, a very slight, occasional anthropogenic pollution with organic matter. Low nutrient content, provides spawning grounds

impact of trophic state on aquatic life, maintaining consistency between the three variables	for salmonids. Class II: Slightly polluted, mesotrophic water receiving small discharges of organic matter. The loadings may lead to slightly increased primary productivity. Class III: Moderately eutrophic water receiving considerable amounts of discharges of organic matter and nutrients. The level of primary production is considerable, and some changes in community structure, including fish species, can be observed. Class IV: Strongly eutrophic, polluted water, receiving discharges of organic matter, nutrients, and harmful substances. Algal blooms are common. Increased decomposition of organic matter together with stratification of water bodies may entail anaerobic conditions and fish kills. Mass occurrences of more tolerant species; populations of fish and benthic organisms are affected. Class V: Extensively polluted, hypertrophic water. Decomposers dominate over producers. Fish or benthic species do not occur permanently.
Acidification *Major criteria: Toxicological impact of acidity on aquatic life as established in US-EPA practices*	<u>Class interpretation:</u> Class I: The buffering capacity of the water is very good. Class II: The buffering capacity of the water is good. Class III: The buffering capacity is weak but keeps the acidity of the water at levels still suitable for most fish. Class IV: The buffering capacity is exceeded, leading to levels of acidity which affect the development of spawn. Class V: The water is without buffering capacity and its acidity is toxic for fish species.
Metals *Major criteria: Toxicological impact on aquatic life as established in US-EPA practices*	<u>Class interpretation:</u> Class I: No anthropogenic pollution with inorganic matter. Class II: Concentrations are below midpoint between natural and chronically toxic levels. Class III: Concentrations are above midpoint between natural and chronically toxic levels. Class IV: Excursions beyond chronic criteria concentrations occur, but do not establish chronically toxic conditions in terms of concentration levels, duration or frequency. Class V: Excursions beyond chronic criteria concentrations allow acutely toxic conditions in terms of concentration levels, duration or frequency.
Chlorinated micropollutants and other hazardous substances *Major criteria:*	<u>Class interpretation:</u> Class I: Not applicable Class II: Not applicable Class III: Loadings are evident, but concentrations are below

Toxicological impact on aquatic life as established in US-EPA practices	chronic and acute criteria levels. Class IV: Excursions beyond chronic criteria concentrations occur, but do not establish chronically toxic conditions in terms of concentration levels, duration or frequency. Class V: Excursions beyond chronic criteria concentrations allow acutely toxic conditions in terms of concentration levels, duration or frequency. Class interpretation:
Radioactivity *Major criteria: Toxicological impact on aquatic life*	[To be determined after experience is gained through data collection and interpretation.]

Table D.6: UNECE Standard Statistical Classification of Ambient Air Quality (1990)

Chemicals and their relevance in measurement estimation
(E = emissions; C = concentrations; I = at impact stations; B = at national or regional background stations; G = at global background stations)

		E	CI	CB	**G**
1.	Sulphur compounds				
1.1	Sulphur oxides (incl. emissions of hydrogen sulphide)	X	X	X	
1.2	Particulate sulphate			X	X
2.	Oxidized nitrogen compounds and oxidants				
2.1	NO_X (excluding nitrous oxide)	X	X	X	
2.2	Nitric acid and particulate nitrate		X	X	X
2.3	Ozone - tropospheric			X	X
	- stratospheric				X
2.4	Nitrous oxide (tropospheric)				X
3.	Reduced nitrogen compounds				
3.1	Ammonia	X	X	X	
3.2	Particulate ammonium compounds		X	X	X
4.	Inorganic carbon compounds				
4.1	Carbon monoxide	X	X		X
4.2	Carbon dioxide	X			X
5.	Halogens and inorganic halogen compounds	X		X	
6.	Volatile organic compounds[4] (incl. halogenated compounds)				
6.1	Methane	X			X
6.2	Non-methane compounds				
	6.2.1 Aldehydes	X	X	X	
	6.2.2 CFCs	X			X
	6.2.3 Halons	X			X

[4] It may become possible to add relevant dioxins (toxic polychlorinated debenzo dioxins and furans) as a separate group under this heading once sufficiently reliable emission and/or concentration data become available.

	6.2.4 Other halogenated hydrocarbons	X			X
7.	Heavy metals (to be specified)	X	X	X	
8.	Suspended particulate matter	X	X	X	X
9.	Chemical composition of precipitation water			X	X

Emissions [tons/year]

1. Emissions from stationary sources
   - 1.1 By process
     - 1.1.1 Combustion of fuels
       - 1.1.1.1 In power plants
       - 1.1.1.2 In industrial establishments, excl. power plants
       - 1.1.1.3 In other economic activities and domestic heating
     - 1.1.2 Other processes, incl. evaporation
       - 1.1.2.1 In industrial sources
       - 1.1.2.2 In non-industrial and domestic sources
   - 1.2 By activity[5]
     - 1.2.1 Agricultural etc. (ISIC 01)
     - 1.2.2 Mining and quarrying (ISIC 10-14)
     - 1.2.3 Manufacture of paper and paper products (ISIC 21)
     - 1.2.4 Manufacture of coke oven products (ISIC 231)
     - 1.2.5 Manufacture of refined petroleum products (ISIC 232)
     - 1.2.6 Manufacture of chemicals and chemical products (ISIC 24)
     - 1.2.7 Manufacture of rubber and plastics products (ISIC 25)
     - 1.2.8 Manufacture of other non-metallic mineral products (ISIC/26)
     - 1.2.9 Manufacture of basic iron and steel (ISIC 271)
     - 1.2.10 Manufacture of basic precious and non-ferrous metals (ISIC/272)
     - 1.2.11 Electricity, gas, steam and hot water supply (ISIC 40)
     - 1.2.12 Other economic activities
     - 1.2.13 Households
   - 1.3 By availability of cleaning
     - 1.3.1 Without cleaning
     - 1.3.2 With cleaning or equivalent device
2. Emission from mobile sources
   - 2.1 From road transport
     - 2.1.1 Using motor spirit (gasoline)
     - 2.1.2 Using gas (diesel) oil
     - 2.1.3 Using other fuels
   - 2.2 From railway transport
   - 2.3 From other transport
   - 2.4 From other mobile sources

Emissions should at this time be reported on the following materials:

- Sulphur oxides, incl. hydrogen sulphide [in units of SO_2]
- NO_X, excl. nitrous oxide [in units of NO_2]

[5] United Nations Statistics Division. "International Standard Industrial Classification of All Economic Activities, Rev. 3". Available from http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=2 (accessed 16 July 2012).

- Ammonia
- Carbon monoxide
- Carbon dioxide [in units of CO_2]
- Total volatile organic compounds, incl. halogenated compounds
- Lead
- Mercury
- Cadmium
- Suspended particulate matter

Emission data on items 1.1.1.1 to 1.1.1.3 should be broken down by type of fuel as follows:

- Coal and coal products
- Products obtained from petroleum refineries
- Natural gas
- Other fuels

Concentrations in ambient air

2.1 Concentrations at impact stations
- 2.1.1 Sulphur oxides [expressed as SO_2]
- 2.1.2 Nitrogen oxides [expressed as NO_2]
- 2.1.3 Carbon monoxide
- 2.1.4 VOCs (to be specified)
- 2.1.5 Lead
- 2.1.6 Mercury
- 2.1.7 Cadmium
- 2.1.8 Suspended particulate matter

2.2 Concentrations at national/regional background stations
- 2.2.1 Sulphur oxides [expressed as SO_2]
- 2.2.2 Particulate sulphate
- 2.2.3 Nitrogen oxides [expressed as NO_2]
- 2.2.4 Nitric acid and particulate nitrate
- 2.2.5 Ozone (tropospheric)
- 2.2.6 Ammonia
- 2.2.7 Particulate ammonium compounds
- 2.2.8 VOCs (to be specified)
- 2.2.9 Chemical composition of precipitation (pH/H+ ammonium, nitrate, chloride and sulphate ions, sodium, potassium, magnesium and calcium ions, conductivity)

2.3 Concentrations at global background stations
- 2.3.1 Ozone (stratospheric)
- 2.3.2 Carbon dioxide
- 2.3.3 Methane
- 2.3.4 CFCs
- 2.3.5 Halons
- 2.3.6 Nitrous oxide
- 2.3.7 Suspended particulate matter

Depositions

3.1 Wet acidifying deposition

- 3.1.1 Sulphur dioxide and sulphate expressed in sulphur content
- 3.1.2 Nitrogen dioxide, nitric acid and nitrate expressed in nitrogen content

3.1.3 Ammonia and ammonium compounds expressed in nitrogen content 3.1.4 pH/H+ Note: Other deposition indicators may be added, once their development is sufficiently advanced.

D.6 The classifications to be used in the FDES to organize statistics on natural disasters are based on the Centre for Research on the Epidemiology of Disasters Emergency Disasters Database (CRED EMDAT). The types of data to be registered in this component of environment statistics, at the most disaggregated variable level, can include, for each calendar year or other appropriate time frame:

Table D.7: Record for individual natural disaster occurrence

1. Identification	**1.1 Name or denomination (if any)**
	1.2 Location and course, spatial trajectory or occurrence
	1.3 Magnitude (scale)
	1.4 Date
	1.5 National declaration of disaster
	1.6 Maps and pictures - hyperlink
	1.7 Appeal for international assistance
2. Type of natural disaster	**2.1 Disaster sub-group**
	2.2 Disaster main type

Table D.8: CRED EMDAT classification of disasters[6]

Disaster Sub-group		Disaster Main Type		Disaster Subtype	
1	**Geophysical**	1.1	Earthquake	1.1.1	Ground Shaking
				1.1.2	Tsunami
		1.2	Volcano	1.2.1	Volcanic eruption
		1.3	Mass movement (dry)	1.3.1	Rockfall
				1.3.2	Avalanche
				1.3.3	Landslide
				1.3.4	Subsidence
2	**Meteorological**	2.1	Storm	2.1.1	Tropical Storm
				2.1.2	Extra-Tropical cyclone (winter storm)
				2.1.3	Local / Convective Storm
3	**Hydrological**	3.1	Flood	3.1.1	General river flood
				3.1.2	Flash flood
				3.1.3	Storm surge/coastal flood
		3.2	Mass Movement (wet)	3.2.1	Rockfall
				3.2.2	Debris flow
				3.2.3	Snow avalanche
				3.2.4	Debris avalanche
				3.2.5	Sudden Subsidence
				3.2.6	Long-lasting subsidence
4	**Climatological**	4.1	Extreme Temperatures	4.1.1	Heat Wave
				4.1.2	Cold Wave
				4.1.3	Extreme winter conditions
		4.2	Drought	4.2.1	Drought
		4.3	Wild fire	4.3.1	Forest fire
				4.3.2	Land fires (grass, scrub, bush, etc.)
5	**Biological**	5.1	Epidemic	5.1.1	Viral infectious diseases
				5.1.2	Bacterial infectious diseases
				5.1.3	Parasitic infectious diseases
				5.1.4	Fungal infectious diseases
				5.1.5	Prion infectious diseases
		5.2	Insect infestation	5.2.1	Type of insect

[6] CRED EMDAT, "Classification". Available from http://www.emdat.be/classification (accessed 7 January 2013).

		5.3	Animal stampede	5.3.1	Type of animal

D.7 Through its World Commission on Protected Areas (WCPA), the IUCN has provided the international guidelines on the categorisation of protected areas for nearly a quarter of a century.[7] These categories are internationally recognised and facilitate a global system for defining, recording and classifying protected areas and the wide variety of specific aims they might embody. Acknowledged on an international level and often incorporated into national legislation, the categories below are based upon the management objectives of a protected area.

Table D.9 IUCN classification of protected areas

Ia: Strict Nature Reserve	Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.
Ib: Wilderness Area	Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
II: National Park	Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
III: Natural Monument or Feature	Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.
IV: Habitat/Species Management Area	Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.
V: Protected Landscape/Seascape	A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
VI: Protected area	Category VI protected areas conserve ecosystems and habitats,

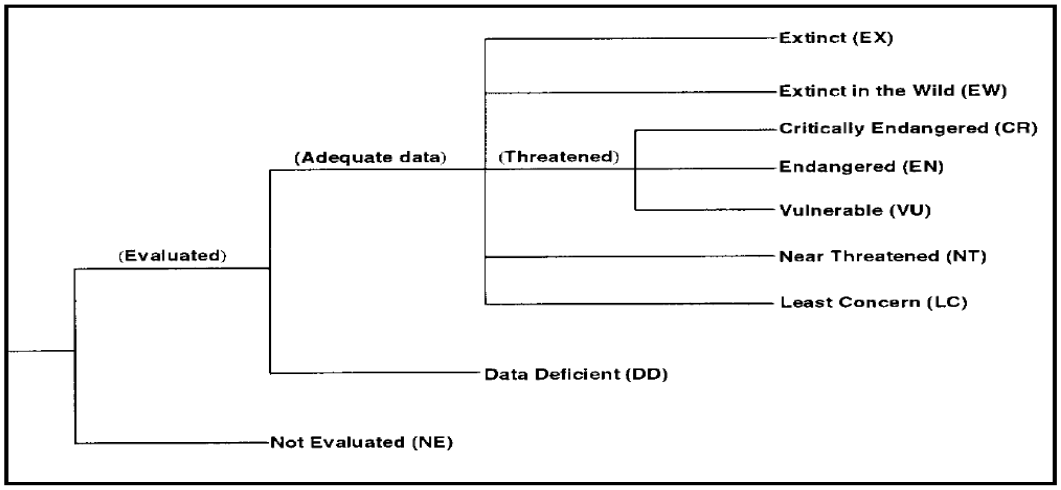
[7] United Nations Environment Programme, World Conservation Monitoring Centre, "IUCN Management Categories". Available from http://www.unep-wcmc.org/iucn-protected-area-management-categories_591.html (accessed 14 November 2012).

United Nations Environment Programme, World Conservation Monitoring Centre, "IUCN Management Categories". Available from http://www.unep-wcmc.org/iucn-protected-area-management-categories_591.html (accessed 14 November 2012).

with sustainable use of natural resources	together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

D.8 The IUCN Red List Categories and Criteria are intended to be an easily and widely understood system for classifying species at high risk of global extinction. The general aim of the system is to provide an explicit, objective framework for the classification of the broadest range of species according to their extinction risk.[8]

Figure D.1: Structure of the categories



Source: IUCN Red List Categories and Criteria Version 3.1

[8] IUCN Species Survival Commission, 2010, "Guidelines for Using the IUCN Red List Categories and Criteria. Available from http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf (accessed 11 June 2012).