United Nations Convention to Combat Desertification
Performance review and assessment of implementation system
Seventh reporting process

Reporting manual for the 2017-2018 UNCCD reporting process

United Nations
Convention to Combat Desertification

praïs
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Background

By decision 7/COP.13, the UNCCD Conference of the Parties (COP) adopted the 2018-2030 strategic framework, containing five strategic objectives and an implementation framework. The strategic objectives address:

1. Improvement of the condition of affected ecosystems, combat desertification/land degradation, promotion of sustainable land management and contribution to land degradation neutrality;
2. Improvement of the living conditions of affected populations;
3. Mitigating, adapting to, and managing the effects of drought in order to enhance resilience of vulnerable populations and ecosystems;
4. Generating global environmental benefits through effective implementation of the UNCCD; and
5. Mobilization of substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level

The implementation framework defines the roles and responsibilities of Parties and Convention institutions in meeting the strategic objectives. For Parties, the implementation framework sets specific aims under three broad headings: a) Financial and non-financial resources; (b) Policy and planning; and (c) Actions on the ground.

From 2018 on, UNCCD national reporting will monitor progress made in the implementation of the 2018-2030 strategic framework. The reporting process and tools and the role and responsibilities of the CRIC in reviewing the reports are spelled out in decisions 13/COP.13 and 15/COP.13.

Purpose

Up-to-date information on measures taken, results achieved and information on challenges faced is critically important for ensuring that the COP has the necessary knowledge to adopt targeted decisions and guidance that is focused to support an effective achievement of the strategic objectives. Such knowledge is valuable also for Parties and other stakeholders that work on the implementation of the UNCCD at national and local levels. From these viewpoints, national reporting is an indispensable tool to bring forward effective planning and implementation of the Convention and the achievement of the strategic objectives at global and national level.

From 2018 on, the UNCCD reporting process will also contribute to the follow-up of progress in implementing the 2030 Agenda for Sustainable Development. The UNCCD secretariat, as the custodian agency for Sustainable Development Goal (SDG) indicator 15.3.1, is requested to use relevant information submitted in the national reports as a contribution to the overall follow-up and review by the High-level Political Forum on Sustainable Development (HLPF).

Focus

In line with the content of the 2018-2030 strategic framework national reporting involves two main types of information: data on the progress made toward the strategic objectives, and narratives/“cases” concerning the aims defined in the implementation framework.

For strategic objectives 1, 2 and 4, the indicators used for reporting on progress are those identified by Parties in decision 22/COP.11. Of the six progress indicators adopted in that decision, three land-based indicators (namely trends in land cover, trends in land productivity and trends in carbon stocks above and below ground) and associated metrics are used not only for monitoring progress toward the respective strategic objectives, but they will also serve as a means of estimating progress toward achieving land degradation neutrality (LDN) targets set in the context of the LDN target-setting programme (TSP) and potential targets set in the context of the current UNCCD reporting , and towards SDG target 15.3, indicator 15.3.1 “Proportion of land that is degraded over total land area”.

Using global data sources, the UNCCD secretariat and the GM have provided Parties with default data on the metrics associated with these three progress indicators. With a view to reducing the reporting burden, Parties will receive templates prepopulated with the default data and will have the possibility to edit or replace this data with national data. Parties that have participated or still are participating in the LDN-TSP may use the data on land-based indicators, gathered and submitted within the framework of the LDN-TSP, for the UNCCD reporting process.

For strategic objective 3, the development of indicators is underway and the 2018 reporting will focus on collecting information of indicators that are currently used by countries to measure similar national objectives or targets.

For strategic objective 5, four indicators are used for reporting, namely:

a) Trends in international bilateral and multilateral Official Development Assistance (ODA);
b) Trends in domestic public resources;
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- Trends in the number of co-financing partners; and
- Resources mobilized from innovative sources of finance.

Reporting on the implementation framework will be done through qualitative information, largely by narratives on national experiences, and on a voluntary basis.

### Reporting tools

The reporting tools for the 2017-2018 reporting process are:

- Country-specific reporting templates, including default national estimates for the three progress indicators on trends in land cover, land productivity and carbon stocks,
- This manual to support the use of the templates, and
- An Updated glossary.

All of these tools will be available in the six official UN languages and posted on the performance review and assessment of implementation system (PRAIS) reporting platform.

In addition to these specific reporting tools, Parties can also refer to the Good Practice Guidance for SDG indicator 15.3.1.\(^1\) which describes methods to assess and quantify the proportion of degraded land based on the three land-based indicators, and to a technical note that provides guidance for the use and interpretation of the default data. Both documents will be made available via the PRAIS portal.

The PRAIS portal has been modified to meet the requirements for the new reporting particularly the creation of country-space pages where each party can log-in and go through information and data specifically related to it.

### Default data and LDN reporting

Depending on country specific circumstances, the interactive reporting template will be prepopulated with default data that are derived from:

- The Status Update Note, for countries that participated in the Land Degradation Neutrality Target Setting Programme (LDN TSP) and submitted their note;
- The ‘default data - original release (2000 – 2010)’, for countries that participated in the LDN TSP and did not submit the Status Update Note;
- The ‘default data - new release (2000 – 2015)’, for countries that did not participate in the LDN TSP.

Parties that participated in the LDN-TSP may use the data on land-based indicators, gathered and submitted within the framework of the LDN-TSP, for the UNCCD reporting process, or may update/replace this data using: i) national data sources or; ii) the ‘default data - new release (2000 – 2015)’ which is made available via the PRAIS portal to both LDN-TSP and non-LDN-TSP countries.

### Process and schedule

National focal points and, when applicable, reporting officers will be able to submit their reports through the PRAIS portal from February 2018 onwards. After submission, all national reports will be available online through the PRAIS portal. The tentative deadline for submitting the reports is July 2018. The final deadline for report submission will be decided upon by the Committee for the Review of the Implementation of the Convention (CRIC) Bureau in consultation with the Executive Secretary.

In addition to the reporting tools and the reporting platform, various measures are taken to support the reporting process and the provision of high quality information:

- Parties will be invited to attend regional workshops on the reporting process, particularly on how to report on quantitative data and manage, analyze and monitor land-based progress indicators. These workshops are tentatively scheduled to be held during March and April 2018.
- An online helpdesk facility will be available from January 2018 onwards to respond to queries from Parties and facilitate the reporting process.
- Throughout the reporting period, Regional Coordination Units with the assistance of a number of consultants will provide technical backstopping for reporting and in particular on land-based progress indicators through the Helpdesk.
- National reports submitted by the deadline will undergo a quality assurance procedure in order to ensure maximum accuracy, particularly in terms of the information relating to land-based progress indicators.

The intersessional session of the CRIC (CRIC 17) will discuss the first preliminary analysis of information deriving from the submitted reports under the 2018-2030 strategic framework. The CRIC will be held, presumably, in early 2019.

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1\(^1\) Available at: [http://www2.unccd.int/sites/default/files/relevant-links/2017-10/Good%20Practice%20Guidance_SDG%20Indicator%2015.3.1_Version%201.0.pdf](http://www2.unccd.int/sites/default/files/relevant-links/2017-10/Good%20Practice%20Guidance_SDG%20Indicator%2015.3.1_Version%201.0.pdf)
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directly to the effective implementation of the 2018-2030 strategic framework. The 2017-2018 reporting process is an opportunity to launch a structured collection and sharing of information on gender-responsive implementation of the UNCCD, and for this purpose, questions on gender issues have been included in the reporting template under both the strategic objectives and the implementation framework. Responding to these questions and provision of related information is voluntary, yet encouraged.

Table 1 presents the reporting attribution to guide Parties through the 2017-2018 reporting process. The symbol * related to indicators under SO1 and SDG 15.3.1 is an indication for Parties that within the UNCCD context are supporting other Parties affected by desertification/land degradation and drought and who wish to submit information on these indicators on a voluntary basis for the purpose of reporting under the Sustainable Development. Information on the implementation framework (narrative section) is voluntary for all Parties.

<table>
<thead>
<tr>
<th>Strategic Objective</th>
<th>Indicator</th>
<th>Indicator name</th>
<th>Affected country Parties</th>
<th>Developed country Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic objective 1</td>
<td>SO1-1</td>
<td>Trends in land cover</td>
<td>X</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>SO1-2</td>
<td>Trends in land productivity or functioning of the land</td>
<td>X</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>SO1-3</td>
<td>Trends in carbon stocks above and below ground</td>
<td>X</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>SDG indicator 15.3.1</td>
<td>Proportion of land that is degraded over total land area</td>
<td>X</td>
<td>*</td>
</tr>
<tr>
<td>Strategic objective 2</td>
<td>SO2-1</td>
<td>Trends in population living below the relative poverty line and/or income inequality in affected areas</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO2-2</td>
<td>Tends in access to safe drinking water in affected areas</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Strategic objective 3</td>
<td>SO3</td>
<td>N/A</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Strategic objective 4</td>
<td>SO4-1</td>
<td>Trends in carbon stocks above and below ground</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO4-2</td>
<td>Trends in abundance and distribution of selected species</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Strategic objectives 1, 2 and 4</td>
<td>Additional indicators</td>
<td>Narrative reporting</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Strategic objective 5</td>
<td>SO5-1</td>
<td>Trends in international bilateral and multilateral official development assistance</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO5-2</td>
<td>Trends in domestic public resources</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO5-3</td>
<td>Trends in number of co-financing partners</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>SO5-4</td>
<td>Resources mobilized from innovative sources of finance, including from the private sector</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
### Purpose

This information is required to facilitate analysis of the progress indicators for strategic objectives 1 and 2.

### Land area

Information relating to land area is required over several years to calculate the proportion of land covered by each land cover class (SO1.1) and the proportion of land that is degraded over total land area (Sustainable Development Goal indicator 15.3.1). This information is also useful to investigate possible climate impacts, which could be potentially identified by the reduction in size of permanent water bodies, the disappearance of permanent water bodies and the loss of coastline.

Total land area, water body area and total country area require respective estimates to be reported in km² for the corresponding year. Land area data is pre-filled in the reporting template. The pre-filled data is editable and thus can be adjusted if these estimates have changed. Any changes are to be justified in the ‘Comments’ column.

Countries should ensure that data on land area is consistent with data on land cover and on the proportion of land that is degraded.

### Demographics

Demographics are required over several years to estimate the proportion of population below the international poverty line (SO2.1) and proportion of population using safely managed drinking water services (SO2.2). Information relating to population is also useful to ascertain how much pressure the increases in population are having on land capital in both rural and urban areas.

Population estimates should be reported in thousand inhabitants. Population estimates can be accessed from website of the United Nations, Department of Economic and Social Affairs, Population Division\(^2\) and/or from the World Bank website.\(^3\)

Countries should ensure that data on demographics is consistent with data on poverty and drinking water.

### Complementary information

Population datasets that have been further disaggregated (by labor force, age, male/female) are available from the World Bank. This disaggregated data may assist in the interpretation of population dynamics and potential population pressures. Any additional disaggregated data should also be uploaded to the PRAIS.

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\(^2\) [https://esa.un.org/unpd/wup/DataQuery/](https://esa.un.org/unpd/wup/DataQuery/)

\(^3\) [https://data.worldbank.org/indicator/SP.POP.TOTL?locations=AF](https://data.worldbank.org/indicator/SP.POP.TOTL?locations=AF)
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

SO1-1 Trends in land cover

Land cover

Rationale

Land cover refers to the observed physical and biological cover of the Earth’s surface. It describes the distribution of vegetation types, as well as bare rocks and soils, inland water bodies and human impacted surfaces.

This indicator estimates the area of land in km\(^2\) that has been classified according to the spectral signature of its physical cover, through the use of remote sensing technology. Because the land cover can change quickly over time, it is used as an important indicator of change to describe the dynamics of the Earth surface resulting from a variety of drivers and factors. This indicator serves two functions: (1) changes in land cover may point to land degradation when there is a loss of ecosystem services that are considered desirable in a local or national context; and (2) a land cover classification system can be used to disaggregate the other two indicators for strategic objective 1 (SO1-2 and SO1-3).

The 2018 reporting will present land cover data for the current monitoring period in terms of extent and percentage of total national land cover for the represented land cover classes. Land cover flows, representing the losses and gains resulting from changes from one land cover class to a different land cover class, will also be examined.

Quantitative data

A variety of land cover products are available from national, regional and global sources. Their computation may be classified via a tiered approach.

| Tier 1 (default method): Global/regional earth observation, geospatial information and modelling |
| Tier 2: National statistics based on data acquired for administrative or natural reference units (e.g., watersheds) and national earth observation |
| Tier 3 (most detailed method): Field surveys, assessments and ground measurements |

Ideally, land cover statistics should be derived primarily using comparable and standardized national data sources (Tier 2 approach). National data products capture country-specific land cover classes and significant land cover change processes. Countries are encouraged, where data and capacity exists, to use national datasets. The availability of time series data for the period 2000-2015 as well as of future updates at regular intervals are important criteria countries should consider in the selection of the most appropriate dataset. In the absence of suitable national datasets, regional and global products can provide a viable alternative.

With a view to reducing the reporting burden, default datasets are used to pre-fill the reporting template in order to calculate land cover initial status and subsequent change. Depending on country-specific circumstances, the reporting template is pre-filled with data sourced from:

1. The Status Update Note, for countries that participated in the Land Degradation Neutrality Target Setting Programme (LDN TSP) and submitted the note;
2. The original release of the ESA Climate Change Initiative Land Cover dataset (CCI-LC) v. 1.6.1, for countries that participated in the LDN TSP and did not submit the Status Update Note;
3. The new release of the ESA Climate Change Initiative Land Cover dataset (CCI-LC) v. 2.0.7, for countries that did not participate in the LDN TSP.

The data specifications of the default land cover datasets are described in Table 2. Default data derived from the new release of the ESA CCI-LC dataset v. 2.0.7 provide annual land cover estimates for the period 2000-2015 and are available via the PRAIS portal to both LDN TSP and non LDN TSP countries.
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality.

Table 2. Data specifications of the default land cover datasets

<table>
<thead>
<tr>
<th>Data specifications</th>
<th>ESA Climate Change Initiative Land Cover dataset v. 1.6.1</th>
<th>ESA Climate Change Initiative Land Cover dataset v. 2.0.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinate system</td>
<td>GCS_WGS_1984</td>
<td>GCS_WGS_1984</td>
</tr>
<tr>
<td>Resolution (m²)</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Aggregation⁴</td>
<td>The 36 ESA land cover classes have been aggregated in 7 classes for reporting purposes: 1 (Tree-covered areas), 2 (Grassland), 3 (Cropland), 4 (Wetland), 5 (Artificial surfaces), 6 (Other land), 7 (Water body)</td>
<td>The 36 ESA land cover classes have been aggregated in 7 classes for reporting purposes: 1 (Tree-covered areas), 2 (Grassland), 3 (Cropland), 4 (Wetland), 5 (Artificial surfaces), 6 (Other land), 7 (Water body)</td>
</tr>
<tr>
<td>Accessing the dataset</td>
<td>Datasets have already been received by all countries participating in the LDN TSP.</td>
<td>PRAIS portal⁶ The following elements of the dataset are provided: -Layout maps in .pdf and .tiff format (Land cover class (7 classes, 22 classes), land cover change, land cover flows) -Raster and vector data in MODIS Sinusoidal SR-ORG:6842 projection and WGS-84 decimal degrees -Metadata -Reporting tables for net area change and the change area matrix</td>
</tr>
</tbody>
</table>

Please consult Figure 1 to:
1. Verify which default datasets have been used to pre-filled your country’s reporting template;
2. Decide which dataset to employ for reporting.

Figure 1. Flow chart for the selection of land cover products

⁴ For aggregation rules, please refer to Table 1 in Annex 1; for a description of the 7 land cover classes used for UNCCD reporting purposes, please refer to Table 2 in Annex 1.
⁵ Please note that the labels of the land cover classes used for UNCCD reporting have changed slightly compared to the labels in use during the LDN TSP (i.e. class 1, 2, 5 and 6 were formerly labelled as “Forest”, “Shrubs, grasslands and sparsely vegetated areas”, “Artificial areas” and “Bare land” respectively).
⁶ http://prais.unccd.int
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

The net area change is automatically calculated as the difference between the initial year and the current monitoring year for each of the 7 aggregated land cover classes in km².

The land cover area change matrix includes all land cover classes and demonstrates the process of change from one land cover class to another, between the initial year and the current monitoring year.

Each country is to specify which datasets were used in their derivation of land cover estimates. For national data sets (Tier 2), the methodology employed is to be outlined. Principles of good practice relevant to the pre-processing and analysis of the imagery are outlined in Table 3. This may serve as a guide to producing the information required.

<table>
<thead>
<tr>
<th>Step</th>
<th>Methodology</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Image selection</td>
<td>- Specify what high resolution imagery was used to facilitate Tier 2 or 3 methodology</td>
</tr>
<tr>
<td>2.</td>
<td>Image corrections (i.e., sun/sensor viewing, atmospheric and topographic effects, masking of cloud and shadow, geometric)</td>
<td>- Specify any image corrections applied. Typically only required if raw imagery. Most Imagery has had some degree of radiometric and geometric correction already applied, prior to download.</td>
</tr>
</tbody>
</table>
| 3.   | Additional data | - Specify if any additional data is used:  
  - Textural indices  
  - Topographic, geological, SAR, Lidar  
  - Multi-angular data  
  - Time-series data  
  - Spectral indices |
| 4.   | Collection of calibration (Training data) | - Specify where training sites were established;  
  - In the field  
  - Using high resolution reference imagery |
| 5.   | Classification of imagery into land cover classes | - Define and justify a spatial disaggregation scheme that matches the default land use classification system  
- Define a land cover map legend with classes that are unambiguous, exhaustive (mapping total land area) and complete (whereby all major changes can be identified)  
- Specify the definitions used to the land cover classes  
- Generate a land cover change matrix, describing the process of change between land cover classes  
- Define the classification algorithm |
| 6.   | Define a baseline (t₀) | - Define baseline year (t₀)  
- Define monitoring period (t₁) |
| 7.   | Generation of land cover products | - Provision of two gridded land cover datasets; land cover baseline (t₀) and land cover for the monitoring period (t₁), generated at the same resolution and classification scheme. |
| 8.   | Validation of land cover products | - For areas that identify as being degraded (Table 4), it is good practice to provide validation for each land cover class in addition to the total area degraded  
- Validation is undertaken through field sampling. However, the manual interpretation of high resolution imagery (i.e., airborne, satellite) and high temporal resolution data (e.g., NDVI time series) for validation purposes, may serve as a more practical option. Describe the process of validation. What was used to validate the land cover products? |
| 9.   | Assessment of Accuracy | Provide an error matrix and confidence intervals for each map generated. |

Table 3. Land cover change methodology and associated good practice

Strategic objectives
Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Qualitative assessment

Interpretation of the indicator

Figure 2 presents an example of how land cover class changes might be described according to major change processes. These flow IDs are color-coded and subsequently inserted in the land cover area change matrix to facilitate interpretation. Guidance on how to assess these changes is provided in Table 4. However, it is important to note that those are suggested interpretations and should be evaluated and adjusted through a participatory process considering national and local conditions. In fact, while some changes may be universally agreed upon as negative (such as change of high conservation value forest to cropland or artificial surfaces or change of natural areas and productive cropland to artificial surfaces), countries may declare other specific changes to be negative (e.g., bush encroachment). Any deviation from the guidance provided should be reported and justified in the ‘comment’ column of the reporting table.

While, in some cases, it may be difficult to attribute specific casual factors to land cover changes, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the changes.

<table>
<thead>
<tr>
<th>FINAL CLASS</th>
<th>ORIGINAL CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree-covered areas</td>
<td>Grassland</td>
</tr>
<tr>
<td>Tree-covered areas</td>
<td>Stable</td>
</tr>
<tr>
<td>Grassland</td>
<td>Aforestation</td>
</tr>
<tr>
<td>Cropland</td>
<td>Aforestation</td>
</tr>
<tr>
<td>Wetland</td>
<td>Woody Encroachment</td>
</tr>
<tr>
<td>Artificial surfaces</td>
<td>Aforestation</td>
</tr>
<tr>
<td>Other Land</td>
<td>Aforestation</td>
</tr>
</tbody>
</table>

Figure 2. Graphical summary of the land cover/land use change matrix for the 6 land cover classes used for UNCCD reporting (30 possible changes, excluding water bodies). Unlikely changes are highlighted in yellow text. Major land cover processes (flows) are identified and boxes are color coded as improvement (green), stable (blue) or degradation (red).

Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality.

Table 4. Descriptions of major land cover change processes identified as flows.\(^{10}\)

<table>
<thead>
<tr>
<th>Flow ID</th>
<th>Flow Process Description</th>
<th>Degradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCF1</td>
<td>Deforestation</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF2</td>
<td>Urban Expansion</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF3</td>
<td>Vegetation loss</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF4</td>
<td>Inundation</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF5</td>
<td>Wetland drainage</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF6</td>
<td>Withdrawal of agriculture</td>
<td>Yes</td>
</tr>
<tr>
<td>LCF7</td>
<td>Stable</td>
<td>No</td>
</tr>
<tr>
<td>LCF8</td>
<td>Afforestation</td>
<td>No</td>
</tr>
<tr>
<td>LCF9</td>
<td>Agricultural expansion</td>
<td>No</td>
</tr>
<tr>
<td>LCF10</td>
<td>Vegetation establishment</td>
<td>No</td>
</tr>
<tr>
<td>LCF11</td>
<td>Wetland establishment</td>
<td>No</td>
</tr>
</tbody>
</table>

Hotspots/Brightspots

The initial identification of hotspot/brightspot areas may be undertaken using raster and vector data as well as tiff layout maps provided for both the LDN TSP and UNCCD reporting. Further investigation, using high resolution satellite data, DEMs and/or ground survey should be used to ascertain exactly what changes are occurring. The exact location of the hotspot/brightspot should be documented by means of coordinates, watershed and/or administrative region.

Complementary information

If the default datasets (ESA CCI-LC v.1.6.1, v.2.0.7) have been replaced with national land cover products, countries are encouraged to upload the relevant geospatial data into the PRAIS. Any additional disaggregated data employed in the analysis of hotspots/brightspots should also be uploaded to the PRAIS. Reference imagery or maps outlining field calibration/training sites and associated sampling regime should also be uploaded.

If any direct and/or indirect drivers contributing to land cover change (positive/negative) are related to underlying gender aspects, such as gendered knowledge, credit, preferences, risk taking, land rights and access to innovation in land-use decision making and management, countries are invited to include them together with a brief explanation.

Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

**S01-2 Trends in land productivity or functioning of the land**

**Land productivity dynamics**

**Rationale**

This indicator estimates the overall above-ground vegetation biomass productivity resulting from all land components and their interactions. It is not conceptually the same as, nor necessarily directly relates to, agricultural income per unit area unit or “land productivity” as used in conventional agricultural terminology.

The 2018 reporting will illustrate land productivity dynamics within land cover classes as well as where the land cover has changed.

**Quantitative data**

Land productivity is estimated by means of Earth observations of Net Primary Productivity (NPP). NPP is typically represented in weight/area/time period (e.g., kg/ha/year; also referred to as annual NPP or ANPP). It is estimated from known correlations between the fraction of absorbed photosynthetically active radiation (fAPAR) and plant growth vigor and biomass. Various vegetation indices can be calculated from image data and used as a proxy for land productivity. The most common is the Normalized Difference Vegetation Index (NDVI).\(^{11}\)

With a view to reducing the reporting burden, global default datasets are used to pre-fill the reporting template. Depending on country-specific circumstances, the reporting template is pre-filled with data sourced from:

1. The Status Update Note, for countries that participated in the Land Degradation Neutrality Target Setting Programme (LDN TSP) and submitted the note;
2. The JRC’s Land Productivity Dynamics (LPD) dataset (Table 5), for all the other countries.

Following the flow chart for the selection of land cover products (Figure 1), countries can report on this indicator using the pre-filled data or can update/replace the pre-filled data with other global or national data that adhere to the Good Practice Guidance outlined in Table 6.

The JRC’s LPD dataset provides the following five qualitative classes of persistent land productivity trajectories from 1999 to 2013:

1. Declining,
2. Moderate decline,
3. Stressed,
4. Stable and
5. Increasing.

In other words, it provides a qualitative combined measure of the intensity and persistence of negative or positive trends and changes in vegetation cover.

The extent of LPD classes is stated in km\(^2\), for each land cover class as well as where the land cover has changed.

A variety of land productivity datasets exist, developed using a range of vegetation indices (e.g., NDVI, EVI) at different spatial scales. As with land cover, the three methodological tiers are also applicable to the approach selected for the computation of this indicator.

**Tier 1 (default method):** Global/regional earth observation, geospatial information and modelling

**Tier 2:** National statistics based on data acquired for administrative or natural reference units (e.g., watersheds) and national earth observation

**Tier 3 (most detailed method):** Field surveys, assessments and ground measurements

Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Table 5. Data specifications of the default productivity datasets

<table>
<thead>
<tr>
<th>Data specifications</th>
<th>JRC’s Land Productivity Dynamics (LPD) dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Global</td>
</tr>
<tr>
<td>Coordinate system</td>
<td>GCS_WGS_1984, MODIS Sinusoidal SR-ORG:6842</td>
</tr>
<tr>
<td>Resolution (km²)</td>
<td>1km²</td>
</tr>
<tr>
<td>Temporal Coverage</td>
<td>1999-2013</td>
</tr>
<tr>
<td>Temporal Resolution</td>
<td>10-days</td>
</tr>
<tr>
<td>Vegetation Index</td>
<td>NDVI</td>
</tr>
<tr>
<td>Aggregation</td>
<td>1-6; 1 (Declining productivity), 2 (Moderate decline), 3 (Stressed), 4 (Stable), 5 (Increasing), 6 (No data)</td>
</tr>
</tbody>
</table>
| Accessing the dataset | PRAIS portal\(^{12}\)  
|                     | The following elements of the dataset are provided:  
|                     | -Layout maps in .pdf and .tiff format (LPD 1999-2013)  
|                     | -Raster data in MODIS Sinusoidal SR-ORG:6842 projection and WGS-84 decimal degrees  
|                     | -Metadata  
|                     | -Reporting tables for LPD for each land cover class and for the net area change for each land cover change |

Other metrics

Each country that edits or replaces the default data or uses a different vegetation index to assess land productivity should specify which vegetation index was used and provide the data source.

Following the application of a vegetation index (e.g., NDVI, EVI), additional metrics can be calculated to assist in the determination of land degradation. Alternative metrics\(^{13}\) to assess land productivity are outlined below.

1. Growing Season Metrics

Metrics linked to key phenological events (i.e., onset of greenness, time of peak NDVI, maximum NDVI, rate of green-up, rate of senescence and integrated NDVI) can be derived from data extracted from time series image datasets.

2. Time Series Metrics

Three additional metrics can be calculated from the remotely-sensed estimates of land productivity (Trend, State, and Performance) and can facilitate the assessment of land degradation. Potential land degradation is identified where productivity may be increasing over time (trend) but remains low relative to the historical range of productivity levels for that location over time (state) or compared to other regions of similar NPP potential (performance).\(^{14}\)

Sources of information

Each country is to specify which datasets were used in their derivation of land productivity indicator. If national data sets are used (Tier 2), the methodology employed is to be outlined. The default data provides national estimates at a spatial resolution of 1km. If a country wants to improve their national land productivity datasets by using a finer spatial resolution, the principles of good practice relevant to the pre-processing and analysis of the imagery are outlined in Table 6. This may serve as a guide to producing the information required.

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\(^{12}\) [http://prais.unccd.int](http://prais.unccd.int)


Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality.

Table 6. Methodology for the assessment of land productivity dynamics and associated good practice

<table>
<thead>
<tr>
<th>Step</th>
<th>Processing steps</th>
<th>Key criteria for the selection of imagery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Image selection</td>
<td>Has an archive of historical data from which a baseline can be calculated (greater than 10 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coverage of entire country</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pixels are small enough to represent productivity at the desired spatial resolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spectral bands required to calculate the required vegetation indices</td>
</tr>
</tbody>
</table>

2. Image corrections (i.e., sun/sensor viewing, atmospheric and topographic effects, masking of cloud and shadow, geometric)

- Specify any image corrections applied. Typically only required if raw imagery. Most imagery has had some degree of radiometric and geometric correction already applied, prior to download.

3. Application of vegetation index (e.g., NDVI, EVI)

- Specify vegetation index used
- Specify any corrections applied to the index e.g., for the effect of fertilizer, remnant cloud cover

4. Calculate growing season metrics (All Tiers)

- How were the growing season metrics calculated? (i.e., using TIMESAT or similar)
- Was any field data collection undertaken to account for the absence of pronounced cyclical variation in productivity (e.g., tropical regions)?
- Was ANPP calibrated for moisture availability?

5. Calculate time series metrics (All Tiers)

- Were the time series metrics (trend, state, performance) calculated?

6. Calculate degradation metrics (All Tiers)

- Specify baseline
- Specify NPP metrics
- Specify any other information that has been necessary to determine degradation

7. Identification of potential ‘false positives’ and explainable anomalies

- Identify and justify ‘explainable anomalies’ or ‘false positives’ using local level knowledge and interpretation as well as site based data (quantitative and qualitative)
- Designate a ‘false positive’ as a ‘negative change’ and subsequently include it with other areas of negative change in the overall indicator
- Incorporate the capacity to generate an ‘explainable anomalies’ or ‘false positives’ map
- Maintain the ‘explainable anomalies’ and ‘false positives’ in original dataset

8. Validation (Tier 3)

- Collect Earth and data from Flux towers, destructive samples

Qualitative assessment

Interpretation of the indicator

The 5 qualitative LPD classes provided as part of the default dataset are not associated with specific levels of above-ground biomass production or specific biomass quantities lost or gained during the observation period. Each class characterizes the overall direction, relative change intensity and persistence of gross primary production independently of the actual level of vegetation abundance or land cover class. This means each LPD class can appear in any class of land cover and for any level of vegetation density.

Some guidance for the interpretation of the LDP classes is provided in Table 7. The LPD dataset


http://web.nateko.lu.se/timesat/timesat.asp
Strategic objectives

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supports the detection of areas with persistent and active declines in primary productivity pointing to potential ongoing land degradation rather than areas which have already undergone degradation processes and have reached a new equilibrium from which they do not further degrade within the observation period in the time series used. However, the LPD dataset should as much as possible be further integrated and contextualized with additional information that reflects climatic and/or socio-economic factors (such as local land use, changes in land use practices and/or yield outputs, population changes, changes in aridity or drought regimes) for a more specific interpretation of possible ongoing land degradation processes.

While it may be difficult to attribute specific casual factors to changes in land productivity, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the observed changes. It is suggested that these land productivity evaluations be adjusted through a participatory process considering national and local conditions. Any deviation from the guidance provided should be reported and justified in the ‘comment’ column of the reporting table.

Table 7. Guidance for the interpretation of LPD classes

<table>
<thead>
<tr>
<th>LPD class</th>
<th>Guidance for interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declining</td>
<td>These classes indicate a high probability of recently active land degradation processes.</td>
</tr>
<tr>
<td>Moderate decline</td>
<td></td>
</tr>
<tr>
<td>Stressed</td>
<td>This class often represents persistent strong inter-annual variations in land productivity, which indicate the beginning of instability in land conditions.</td>
</tr>
<tr>
<td>Stable</td>
<td>This class indicates a low probability of active land degradation and therefore a satisfactory or acceptable situation, but it doesn't exclude the possibility that the land has already undergone degradation processes and has reached a new equilibrium (i.e. it is not further degrading but also not recovering).</td>
</tr>
<tr>
<td>Increasing</td>
<td>This class indicates a satisfactory or improving situation from a degraded state, but in some cases it may also indicate unfavorable processes such as shrub encroachment in grasslands, or land abandonment.</td>
</tr>
</tbody>
</table>

Countries that edited or replaced the default data or used alternative time series metrics to assess land productivity can use a look-up table (Table 8) to identify combinations of metrics that indicate land degradation.

Table 8. Look-up table indicating support class combinations of productivity metrics for determining whether a pixel is degraded. Classes 1-5 show degradation, where Y (Degraded), N (not degraded) in that metric or pixel

<table>
<thead>
<tr>
<th>Class</th>
<th>Trend</th>
<th>State</th>
<th>Performance</th>
<th>Degraded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>6</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>7</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

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Strategic objectives

**Strategic objective 1:** To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

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**Hotspots/brightspots**

The initial identification of hotspot/brightspot areas may be undertaken using raster data and tiff layout maps provided in the PRAIS. Further investigation, using high-resolution satellite data, DEMs and/or ground surveys, can be used to ascertain exactly what changes are occurring. The exact location of the hotspot/brightspot should be documented by means of GPS coordinates, watershed and/or administrative region. Countries are encouraged to produce a hotspots map to increase the policy relevance of the indicator.

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**Complementary information**

If the JRC’s LPD dataset has been replaced with other land productivity datasets, countries are encouraged to upload the relevant geospatial data, any additional metrics or spatially disaggregated data to the PRAIS. If ‘false positives’, explainable anomalies or hotspot maps were produced as part of the indicator interpretation, these should be uploaded to the PRAIS.

If any direct and/or indirect drivers that affects land productivity (positive/negative) are related to underlying gender aspects, such as gendered knowledge, credit, preferences, risk taking, land rights and access to innovation in land-use decision making and management, countries are invited to include them together with a brief explanation.
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

SO1-3 Trends in carbon stocks above and below ground

Soil organic carbon stock

Rationale

In decision 22/COP.11, soil organic carbon (SOC) stock was adopted as the metric to be used with the understanding that this metric will be replaced by total terrestrial system carbon stocks, once operational. This metric estimates the amount of carbon stored in soil and is the main component of soil organic matter (SOM). SOC has a significant influence on the physical, chemical and biological properties of the soil and is critical for improving soil fertility and quality, water retention, reducing soil erosion and enhancing crop productivity. The level of SOC can be used as a proxy for ecosystem and soil health.

The 2018 reporting will illustrate the distribution of average SOC stocks within land cover classes and analyse SOC stock changes related to changes in land cover.

Quantitative data

SOC stock information can be sourced from a variety of methods at varying scales. The estimation of change in SOC stocks typically involves the integration of datatypes including default values, soil maps, historical point data, spatial monitoring, intensive monitoring, and experimental data and modelling. As with the two previous indicators (SO1-1, SO1-2), the reporting burden can be reduced by employing default datasets that have been used to pre-fill the reporting template. Depending on country specific circumstances, the reporting template is pre-filled with data sourced from:

1. The Status Update Note, for countries that participated in the Land Degradation Neutrality Target Setting Programme (LDN TSP) and submitted the note;
2. ISRIC’s SoilGrids250m\(^{19}\) dataset (described in Table 9) with SOC stock estimates for the period 2000-2010, for countries that participated in the LDN TSP and did not submit the Status Update Note;
3. ISRIC’s SoilGrids250m dataset with annual SOC stock estimates for the period 2000-2015, for countries that did not participate in the LDN TSP.

Similar to the flow chart for selection of land cover products (Figure 1), countries can report using the pre-filled data or can update/replace the pre-filled data with other global or national data that adhere to the Good Practice outlined in Table 10. In the absence of suitable national datasets, the ISRIC’s SoilGrids250m dataset provides a viable alternative. Annual SOC stock estimates for the period 2000-2015 are made available via the PRAIS portal to both LDN TSP and non LDN TSP countries.

ISRIC’s SoilGrids250m products of SOC density, SOC percentage, bulk density, gravel fraction and depth to the bedrock have been aggregated to 0-30cm (topsoil) in order to derive national SOC stock estimates for the year 2000.

In order to provide an estimate of the change in SOC stocks, the default method used to prefill the reporting template\(^{20}\) employs the land cover information (indicator SO1-1), which demonstrates change from one land cover class to another. These changes are combined with the following inputs in order to make coarse estimates of SOC stock change using change factors:\(^{21}\) i) SoilGrids’ estimate and ii) general bioclimatic zone data.

SOC stocks for 0-30cm of topsoil are expressed in tonnes per hectare for each land cover class. The impact of land cover changes is also demonstrated with respect to SOC stocks.

\(^{19}\)http://www.isric.org/explore/soilgrids

\(^{20}\)The method employed to estimates changes in SOC stocks is based on a modified Tier 1 IPCC methodology for compiling National Greenhouse Gas Inventories (IPCC, 2006). Additional to the IPCC methodology, where land cover has moved from a degraded type (e.g. bare land) to a less degraded type (e.g. forest or grassland) an inverse relationship is employed to estimate restoration of SOC stocks

Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Associated SOC stock changes for the period 2000-2010 and 2000-2015 for LDN-TSP and non LDN TSP countries, respectively, are pre-filled for:

- Initial SOC stock (ha)
- Final SOC stock (ha)
- Initial SOC stock total (t)
- Final SOC stock total (t)
- SOC stock change (t)

The three methodological tiers, as outlined for previous indicators, are also applicable for the computation of SOC stocks. The default data (Table 9) follows a Tier 1 approach and represents national level estimates of SOC stocks in topsoil (0-30cm) within each land cover class (in tonnes per hectare).

**Tier 1 (default method):** Global/regional earth observation, geospatial information and modelling

**Tier 2:** National statistics based on data acquired for administrative or natural reference units (e.g., watersheds) and national earth observation

**Tier 3 (most detailed method):** Field surveys, assessments and ground measurements

### Table 9. Data specifications of the default datasets for Soil Organic Carbon (SOC)

<table>
<thead>
<tr>
<th>Data specifications</th>
<th>ISRIC’s SoilGrids250m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Global</td>
</tr>
<tr>
<td>Coordinate system</td>
<td>GCS_WGS_1984, MODIS Sinusoidal SR-ORG:6842</td>
</tr>
<tr>
<td>Resolution (m²)</td>
<td>250</td>
</tr>
<tr>
<td>Temporal Coverage</td>
<td>Based on legacy soil data points spanning several decades, the spatial prediction of SOC coverage is taken to represent the baseline SOC condition in 2000. Derived estimates of change are based on two different ESA releases – v 1.6.1 for 2000-2010 and v 2.0.7 for annual changes from 2000-2015. Each 2000 baseline is also informed by the April 2017 and October 2017 updates of SoilGrids250m respectively.</td>
</tr>
<tr>
<td>Value Range</td>
<td>Continuous data 0 (shifting sands, bare rock, ice, water) – 250+ (wetlands/peatlands in highlands and cold climate) tons/hectare</td>
</tr>
<tr>
<td>Accessing the dataset</td>
<td>PRAIS portal[^22]</td>
</tr>
</tbody>
</table>

The following elements of the dataset are provided:
- Layout maps in .pdf and .tiff format (SOC 2015, SOC change)
- Raster data in MODIS Sinusoidal SR-ORG:6842 projection and WGS-84 decimal degrees.
- Metadata
- Reporting tables for SOC stock in topsoil (tons/ha; 2000-2015) for each land cover class and initial and final SOC (t/ha) for 2000 and 2015 and subsequent SOC stock change for each land cover change

Each country is to specify which datasets were used in their derivation of SOC stock estimates.

Where possible, national datasets (Tier 2) for both SOC baselines and change factors should be

[^22]: [http://prais.unccd.int](http://prais.unccd.int)
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

employed to complement the default values (Table 9). It is important to note that the Tier 1 method is strongly reliant on land cover change to estimate change in SOC stocks. While Tier 2 SOC stock change estimations are also largely based on land cover change, the assessment of SOC stock changes can diverge from that of land cover (positive, negative or stable) due to the impact of additional information (i.e., the application of relationships between environment and management factors and the SOC stocks).

For national datasets (Tier 2), the methodology employed is to be outlined. The default data provides national estimates at a spatial resolution of 250m². This indicator involves both baseline data and stock change factors in its computation and thus, it is viable to employ a combination of methods involving all three tiers to derive a national SOC stock dataset. Regardless of what tier, or combination of tiers are used, the four steps outlined in Table 10 are required. For each methodological step, the associated good practice principles are outlined to serve as a guide for reporting.

Table 10. Methodology for the computation of SOC stock and associated good practice

<table>
<thead>
<tr>
<th>Step</th>
<th>Methodology</th>
<th>Good Practice</th>
</tr>
</thead>
</table>
| 1.   | Estimation of an average SOC stock (0-30cm) for each identified spatial feature for the baseline period | -The baseline can be informed using a variety of data sources at a range of scales  
  - Default values (All scales)  
  - Soil maps (All scales)  
  - Historical point data (National/sub-national)  
  - Spatial monitoring data (National/sub-national)  
  - Intensive monitoring data (Sub-national)  
  - Experimental data (Sub-national)  
  - Models (All Scales) |
| 2.   | Comparison of the SOC stock in the monitoring period (t₁) with the average baseline (t₀) SOC stock for the same spatial feature | -Ensure that the approach for the baseline assessment is the same as that for the monitoring period, within the same tier method. |
| 3.   | Assessment of whether there has been an increase, decrease or no change in SOC stock for each identified spatial feature and assignment of whether the area is degraded or not degraded. | Estimating change  
  \[ r_{soc} = \left( \frac{soc_{t_1} - soc_{t_0}}{soc_{t_0}} \right) \times 100 \]  
  \[ r_{soc} = \text{relative change in soil organic carbon for a spatial feature (\%)} \]  
  \[ soc_{t_0} = \text{baseline soil organic carbon stock for spatial feature (t C ha}^{-1}) \]  
  \[ soc_{t_1} = \text{soil organic carbon stock for final monitoring period for spatial feature (t C ha}^{-1}) \]  

Estimating uncertainty  
- IPCC 95% confidence interval (Tier 1)  
- Statistical approaches for model-based quantification of uncertainty for map products (Tier 2, 3)  
  - Direct quantification through geostatistical modelling  
  - Geostatistical modelling of error in existing maps  
  - Expert judgement  
- Cross-validation of explicit modelling of uncertainties, i.e., mean error, root mean squared error (Tier 2, 3) |

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### Strategic objectives

**Strategic objective 1:** To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Define a threshold to determine degradation</strong></td>
</tr>
<tr>
<td></td>
<td>- Define a threshold between the baseline and the monitoring period (An arbitrary &gt;10% change is suggested. This should be refined by national authorities)</td>
</tr>
<tr>
<td></td>
<td>- Determination of the status of change in SOC stocks as;</td>
</tr>
<tr>
<td></td>
<td>- Degraded (Spatial features with greater than 10% average net reduction in SOC stocks between baseline and current observations)</td>
</tr>
<tr>
<td></td>
<td>- Not degraded (Spatial features with less than 10% average net reduction in SOC stocks between baseline and current observations)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.</th>
<th>Identification of potential ‘false positives’ and explainable anomalies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Identify and justify ‘explainable anomalies’ or ‘false positives’ using local level knowledge and interpretation as well as site based data (quantitative and qualitative)</td>
</tr>
<tr>
<td></td>
<td>- Designate a ‘false positive’ as a ‘negative change’ and subsequently include it with other areas of negative change in the overall indicator</td>
</tr>
<tr>
<td></td>
<td>- Incorporate the capacity to generate an ‘explainable anomalies’ or ‘false positives’ map</td>
</tr>
<tr>
<td></td>
<td>- Maintain the ‘explainable anomalies’ and ‘false positives’ in original dataset</td>
</tr>
</tbody>
</table>

### Qualitative assessment

#### Interpretation of the indicator

Countries can assess whether there has been an increase (positive change) or decrease (negative change) or no change in SOC stock for each land cover class and each land cover change.

Additional local information may assist in interpreting the data.

Besides land cover change, it may be difficult to attribute specific causal factors to changes in SOC stocks; nevertheless, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the observed changes. It is suggested that these SOC stock change evaluations be adjusted through a participatory process considering national and local conditions. Any deviation from the guidance provided should be reported and justified in the ‘comment’ column of the reporting table.

#### Hotspots/brightspots

The initial identification of hotspot/brightspot areas may be undertaken using raster data and tiff layout maps provided in the PRAIS. Further investigation involving ground survey and integration of DEMs should be undertaken to ascertain exactly what change is occurring. The area (in km²) and the exact location of the hotspot/brightspot should be documented by means of GPS coordinates, watershed and/or administrative region. It is also good practice to incorporate the capacity to generate a hotspots map.²⁴

#### Complementary information

If the default SoilGrid250m dataset has been replaced with other SOC stock datasets or if any additional local data was used to interpret the SOC stock changes, countries are encouraged to upload the relevant data to the PRAIS. If ‘false positives’, explainable anomalies or hotspot maps were produced as part of the indicator interpretation, these should be uploaded to the PRAIS.

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## Strategic objectives

### Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

<table>
<thead>
<tr>
<th>S01</th>
<th>Proportion of land that is degraded over total land area (Sustainable Development Goal indicator 15.3.1)</th>
</tr>
</thead>
</table>

**Rationale**

Land degradation is defined as the reduction or loss of the biological or economic productivity and complexity of rain fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from a combination of pressures, including land use and management practices.\(^{25}\)

Using the three indicators (S01: 1-3), the 2018 reporting will estimate the proportion of land that is degraded over total land area, which is also Sustainable Development Goal (SDG) indicator 15.3.1 corresponding to SDG target 15.3: ”By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation neutral world”. In line with decision 15/COP.13, the information compiled in national reports will be used by the secretariat, in its capacity as custodian agency for SDG indicator 15.3.1, to contribute to the overall follow-up and review by the High-level Political Forum on Sustainable Development.

**Proportion of land that is degraded**

This indicator estimates the spatial extent of land that is degraded. It is a binary quantification based on indicators S01: 1-3 and their metrics:

1. Land cover (land cover change)
2. Land productivity (net primary productivity); and
3. Carbon stocks (soil organic carbon stocks).

It is reported as a single figure quantifying the area of land that is degraded as a proportion of total land area, defined as the total surface area of a country excluding the area covered by inland waters, like major rivers and lakes. It can, however, be spatially disaggregated by land cover class or other policy relevant unit (i.e., agro-ecological, bio-cultural, administrative).

The total area of degraded land is expressed in km\(^2\) and the proportion of degraded land can be calculated for each year.

With a view to reducing the reporting burden, the reporting template is pre-filled with default estimates sourced from:

1. The Status Update Note, for countries that participated in the Land Degradation Neutrality Target Setting Programme (LDN TSP) and submitted the note;
2. The ‘default data - new release (2000 – 2015)’, for countries that did not participate in the LDN TSP.

Default estimates of the proportion of degraded land derived from the new data release (2000 – 2015) are available via the PRAIS portal to both LDN TSP and non LDN TSP countries.

**Method**

Since the indicators S01: 1-3 are complementary and non-additive components of land-based natural capital, they are combined using a one-out, all-out (1OAO) approach. The 1OAO is the most comprehensive and conservative way to integrate separate indicator values, consistent with the precautionary principle.\(^{26}\) It maintains that degradation is considered to have occurred if negative or declining changes are reported in any one of the indicators S01: 1-3 (Figure 3), for a given pixel or land unit. The 1OAO principle is recommended as Good Practice (Table 1). If alternative methods were employed to compute the SDG indicator or integrate the S01 indicators and their associated metrics, countries should document them in the reporting template.

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\(^{25}\) UNCCD. 1994. Article 1 of the Convention Text: http://www2.unccd.int/sites/default/files/relevant-links/2017-01/UNCCD_Convention_ENG_0.pdf

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Figure 3. Steps to derive the SDG indicator from SO1 indicators, where ND is not degraded, D is degraded, P is positive, N is negative and S is stable.  

The methodology and associated good practice for estimating SDG Indicator 15.3.1 is outlined in Table 11.

Table 11. Methodology and associated good practice for the derivation of SDG Indicator 15.3.1

<table>
<thead>
<tr>
<th>Step</th>
<th>Methodology</th>
<th>Good Practice</th>
</tr>
</thead>
</table>
| 1.   | Select the indicators that are to be employed to derive SDG 15.3.1 | i. Land cover  
ii. Land productivity  
iii. Carbon stocks |
| 2.   | Evaluation of changes in the indicators selected | -Changes in the indicators are depicted as  
i. Positive or improving  
ii. Negative or declining  
iii. Stable or unchanging  
- Assess change for interim and final reporting years in relation to the baseline year for each indicator (Figure 3) |
| 3.   | Application of the One Out All Out (1OAO) principle | The 1AO approach is used to combine the results from all three indicators, to assess degradation status for each monitoring period at the indicator level. It maintains that degradation is considered to have occurred if degradation is reported in any of the indicators, for a given pixel or land unit. |
| 4.   | Derivation of SDG 15.3.1 baseline | - Baseline year for SDG 15.3.1 is 2015 (t0)  
- Derived from initial quantification and assessment of time series data for the sub-indicators for each land unit during the period 2000-2015. |
| 5.   | Derivation of values for SDG 15.3.1 during each monitoring period (t1-n) | - Derived from the quantification and assessment of changes in the sub-indicators, as to whether there has been positive, negative or no change for each land unit relative to the baseline (Figure 3)  
- Assess change for interim and final reporting years in relation to the baseline year for the indicator |
| 6.   | Aggregation of the degradation ratings to | - Equations used in national level monitoring and aggregation are |
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

| facilitate the reporting at a national scale | provided in Table 1, Annex 2. |

Level of confidence

The generation of explainable anomalies or a ‘false positives’ map for the land productivity and SOC stock indicator will assist in obtaining a more accurate estimate of land degradation. Some guidance for the interpretation of the explainable anomalies is provided in Table 12. This table should accompany a ‘support class’ map, which shows which SO1 indicator or combination of indicators supports the classification of ‘degraded’ or ‘not degraded’ for a given pixel or land unit.

On a qualitative basis, the country’s level of confidence can be defined as:

a) High, if based on comprehensive evidence,
b) Medium, if based on partial evidence
c) Low, if based on limited evidence

Table 12. Look-up table indicating support class combinations of sub-indicators to assist in the interpretation of confidence in degradation assessments (Y is Degradation at the sub-indicator or indicator level, N is Not Degraded)

<table>
<thead>
<tr>
<th>Support Class</th>
<th>Sub-Indicator</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land Cover</td>
<td>Productivity</td>
</tr>
<tr>
<td>1</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>4</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>6</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>7</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>8</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Complementary information

If a land degradation map or a ‘support class’ map, which show which indicator or combination of indicators supports the classification of ‘degraded’ or ‘not degraded’ for a given pixel or land unit, were produced, they should be uploaded to the PRAIS. Any indicator datasets used to assess the proportion of land that is degraded, that have not already been included as part of the previous reporting on indicators SO1: 1-3, should be uploaded to the PRAIS.

https://unstats.un.org/unsd/envaccounting/ceea/meetings/twelfth_meeting/UNCCD_Indicator_15.3.1_20170421.pdf
Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Voluntary targets can be set to achieve SO1 and therefore “to improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality”. This includes the formulation by countries of LDN targets in accordance with their specific national circumstances and development priorities.

The 2018 reporting will describe the countries’ level of ambition in achieving SO1.

Counties are invited to formulate data-based, quantifiable and time-bound voluntary targets to achieve land degradation neutrality in accordance with specific national circumstances and development priorities.\(^{30}\)

*National LDN target(s):* The ambition of a country with respect to achieving LDN should be no net loss of healthy and productive land for the whole land area of the country when compared to the baseline. Countries should elect to set a more ambitious LDN target so that gains in healthy and productive land will exceed losses.\(^{31}\)

*Sub-national LDN target(s):* Countries may wish to complement national LDN targets with sub-national ones (for specific regions or defined eco-zones). Geographically bound targets for achieving a neutral (no net loss) or improved (net gain) state allow countries to focus on areas that have been identified as degradation hot spots or of high value in terms of achieving LDN.

*Specific targets to avoid, reduce or reverse land degradation:* The LDN approach also embraces the articulation of more specific targets, which although not conceived in terms of neutrality, contribute to avoiding, reducing and reversing land degradation (Figure 4).


Strategic objectives

Strategic objective 1: To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

Countries may decide to set their voluntary LDN targets by adopting one or a combination of the approaches, with accompanying examples as described in Table 13.

<table>
<thead>
<tr>
<th>Level of application</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>National level (no net loss)</td>
<td>“LDN is achieved by 2030 compared to the 2015 baseline”</td>
</tr>
<tr>
<td>National level (net gain)</td>
<td>“LDN is achieved by 2030 compared to the 2015 baseline plus an additional 10% of the national territory has improved”</td>
</tr>
<tr>
<td>Sub-national level (no net loss)</td>
<td>“LDN is achieved in the Western province of country X by 2030, compared to the 2015 baseline”</td>
</tr>
<tr>
<td>Sub-national level (net gain)</td>
<td>“LDN is achieved in the Southern province of country X by 2030, compared to the 2015 baseline plus an additional 25% of the province territory has improved”</td>
</tr>
<tr>
<td>Specific target (to avoid land degradation)</td>
<td>“Halt the conversion of forests and wetlands to other land cover classes by 2020”</td>
</tr>
<tr>
<td>Specific target (to reduce land degradation)</td>
<td>“Reduce the rate of soil sealing (conversion to artificial land cover) by 50% by 2030, compared to the 2015 baseline”</td>
</tr>
<tr>
<td>Specific target to reverse land degradation)</td>
<td>“Improve productivity and Soil Organic Carbon (SOC) stocks in cropland and grasslands by 2030, compared to the 2015 baseline”</td>
</tr>
<tr>
<td></td>
<td>“Rehabilitate X million hectares of degraded and abandoned land for crop production by 2030”</td>
</tr>
<tr>
<td></td>
<td>“Increase forest cover by 20% by 2030, compared to the 2015 baseline”</td>
</tr>
</tbody>
</table>

During the planning and implementation of the LDN targets, it is recommended that countries undertake the following:

- Involvement of local stakeholders
- Combining approaches for participatory planning with scientific and socio-economic assessment tools

For the LDN TSP countries that have set targets and submitted a Status Update Note, the reporting table will be pre-filled with their targets. The pre-filled targets are editable and can be adjusted.

Other targets

Any additional targets that have been set relevant to SO1 should be specified with reference to the year and level of application (national, sub-national).

Complementary information

Countries are encouraged to indicate whether the targets related to LDN and/or SO1 have been adopted or officially endorsed and if yes, by which body (institution, government agency, regulation). Furthermore, countries are encouraged to outline the linkages that these targets have with Sustainable Development Goals (SDG) and opportunities to create leverage and synergies with their countries’ climate and biodiversity agendas.

In cases where voluntary targets relevant to SO 1 include a gender dimension, countries are invited to provide this information, specifying year and level of application. If the target reflects one or more of the four priority areas of the Gender Action Plan (i.e. 1. participation in decision making; 2. economic empowerment; 3. land rights and access to resources; 4. knowledge and capacity building) this can also be specified.

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33 Adapted from http://www2.unccd.int/sites/default/files/documents/18102016_LDN%20country%20level_ENG.pdf
34 Decision3/COP.13
Strategic objectives

Strategic objective 2: To improve the living conditions of affected populations

**S02-1** Trends in population living below the relative poverty line and/or income inequality in affected areas

### Rationale

This indicator estimates the well-being of populations in monetary terms. Two metrics can be used for this purpose: proportion of the population below the international poverty line and income inequality. These metrics can be used interchangeably according to country specific conditions. The proportion of the population below the international poverty line is generally considered relevant to less developed countries, where extreme poverty and destitution are core development challenges, whereas the income inequality is a useful metric for both low income and middle income countries as it estimates the extent of wealth distribution in a region.

The 2018 reporting will illustrate the global distribution of the population living below the international poverty line. Correspondingly, income inequality will be explored via the Gini Index. The trends in these metrics provide an insight into the direction each nation is moving.

### Relevant metric

Countries are to specify which metrics they would like to use:

- Proportion of the population below the international poverty line, OR
- Income inequality

### Proportion of population below the international poverty line

#### Quantitative data

The ‘international poverty line’ is currently set at USD 1.90 a day, based on 2011 purchasing power parity. The proportion of population below the international poverty line is therefore defined as the percentage of the population living on less than USD 1.90 a day at 2011 international prices.

While the reporting template is not pre-filled for this indicator, countries can refer to available data sources. The World Bank's Development Research Group maintains a database that is updated annually as new survey data become available. Furthermore, as the proportion of population below the international poverty line by sex, age, employment status and geographical location (urban/rural) is also an SDG indicator (SDG indicator 1.1.1),

[35](https://unstats.un.org/sdgs/metadata/files/Metadata-01-01-01a.pdf) country data can be accessed and downloaded directly from the SDG database.

Further disaggregation of this indicator by sex, age, ethnicity, geography and other attributes within a population is encouraged to attain a full understanding of the indicator.

#### Sources of information

Countries are to specify the source of information.

### Income inequality

#### Quantitative data

The Gini Index is employed to provide an estimate of ‘Income Inequality’. It estimates the extent to which the distribution of income (or in some cases, consumption expenditure) among individuals or households within an economy deviates from perfectly equal distribution. A Gini index of zero represents perfect equality and 100, perfect inequality.

While the reporting template is not pre-filled for this indicator, countries can refer to available data sources. This metric is collected annually by the World Bank. The datasets can be accessed here.

#### Sources of information

Countries are to specify the source of information.

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36 [https://unstats.un.org/sdgs/indicators/database/?indicator=1.1.1](https://unstats.un.org/sdgs/indicators/database/?indicator=1.1.1)
Strategic objectives

Strategic objective 2: To improve the living conditions of affected populations

Qualitative assessment

Interpretation of the indicator

To assist in the interpretation, countries are encouraged to visualize their respective metrics by means of a graph. This can be undertaken in Excel, after downloading the data. Alternatively, graphs for each country are available for viewing and download from the World Bank website.\(^{39,40}\)

While it may be difficult to attribute specific causal factors to changes in the metrics, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the observed changes.

Hotspots/brightspots

If disaggregated data for these metrics (e.g., per administrative division, urban vs rural, affected areas or other socio-economic strata e.g. sex disaggregated data) are available in your country, indicate where the most significant hotspots/brightspots related to this indicator are located. Countries are encouraged to ascertain whether or not disaggregated data (ideally spatial) is available at national government departments.

Complementary information

If additional datasets (e.g., disaggregated spatial data) were used to assess hotspots/brightspots related to this indicator, countries are encouraged to upload them into the PRAIS. If graphs were used in the interpretation of the metrics, these should also be uploaded to the PRAIS.

If any direct and/or indirect drivers are related to underlying gender aspects, such as gendered roles, or social and cultural norms and beliefs, lack of capacity or influence, countries are invited to include them together with a brief explanation.


\(^{40}\) [https://data.worldbank.org/indicator/NY.GNP.ATLS.CD?view=chart](https://data.worldbank.org/indicator/NY.GNP.ATLS.CD?view=chart)
Strategic objective 2: To improve the living conditions of affected populations

Proportion of population using safely managed drinking water services

Rationale

Having access to water is a key determinant of child survival, maternal and children’s health, family well-being and economic productivity. Accordingly, an increasing trend in the access to safe drinking water would contribute to improvement in the living conditions of affected populations.

The 2018 reporting will demonstrate how the population using safely managed drinking water services is globally distributed. Changes in the proportion of population with access to these services over time will be explored, globally and by region/sub-region.

Quantitative data

In order to quantify safely managed drinking water, the proportion of the population using improved drinking water sources, defined as those piped (into dwellings, yards or plots; public taps or standpipes) and non-piped (boreholes or tube wells; protected dug wells; protected springs; rainwater; packaged or delivered water) which are located on the premises, available when needed, and free from faecal and priority chemical contamination, is determined.

While the reporting template is not pre-filled for this indicator, countries can refer to available data sources. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) has produced regular estimates of national, regional and global progress on drinking water, sanitation and hygiene (WASH) since 1990. Furthermore, as the proportion of population using safely managed drinking water sources is also an SDG indicator (SDG indicator 6.1.1), country data can be accessed and downloaded directly from the SDG database. The indicator is disaggregated by urban and rural populations, expressed as a percentage and available from 2000-2015.

Sources of information

Countries are to specify the source of information.

Qualitative assessment

Interpretation of the indicator

To assist in the interpretation, countries are encouraged to visualize their respective SDG Indicator 6.1.1 by means of a graph. This can be undertaken in excel after downloading the data. Alternatively, graphs for each country, representing each disaggregation (% rural population, % urban population, % total population) are available for viewing and download from the World Bank website.

While it may be difficult to attribute specific casual factors to changes in the metrics, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the observed changes. Any deviation from the guidance provided should be reported and justified in the ‘comment’ column of the reporting table.

Hotspots/brightspots

If disaggregated data for this indicator (e.g., per administrative division, urban vs rural, affected areas or other social-economic strata, such as sex disaggregated data) are available in your country, indicate where the most significant hotspots/brightspots related to this indicator are located. Countries are encouraged to ascertain whether or not disaggregated data (ideally spatial) is available at national statistical departments.

Complementary information

If additional datasets (e.g., disaggregated spatial data) were used to assess hotspots/brightspots related to this indicator, countries are encouraged to upload them into the PRAIS. If graphs were used in the interpretation of the indicator, these should also be uploaded to the PRAIS.

If any direct and/or indirect drivers concerning access to safe drinking water in affected areas are related to underlying gender aspects, such as gendered roles, or social and cultural norms and beliefs, lack financial means etc., countries are invited to include them together with a brief explanation.

Sources:

43 https://unstats.un.org/sdgs/indicators/database/?indicator=6.1.1
**Strategic objectives**

**Strategic objective 2: To improve the living conditions of affected populations**

<table>
<thead>
<tr>
<th>S02</th>
<th>Voluntary targets</th>
</tr>
</thead>
</table>

**Rationale**

Voluntary targets can be set to achieve S02 and therefore “to improve the living conditions of affected populations”.

The 2018 reporting will present the countries’ level of ambition in achieving S02.

**Targets**

List any target relevant to S02-1 and S02-2 that your country has set and indicate the expected year of achievement and level of application (e.g., national, sub-national) in the reporting template.

Spatially disaggregated S02-1 and S02-2 data can be beneficial in the determination of voluntary targets, particularly if these datasets are integrated. This approach facilitates an insight into the relationship between poverty and water supply in discrete locations, which is key to accurate target setting.

**Complementary information**

Countries are encouraged to indicate whether the targets related to S02 have been adopted or officially endorsed and if yes, by which body (institution, government agency, regulation). Furthermore, countries are encouraged to outline the linkages that these targets have with Sustainable Development Goal (SDG) agendas and opportunities to create leverage and synergies with their countries’ socio-economic and infrastructure agendas. If disaggregated data from S02-1 or S02-2 was used for the determination of voluntary targets, these datasets should be uploaded to the PRAIS.

In cases where voluntary targets relevant to S02 include a gender dimension, countries are invited to provide this information, specifying year and level of application. If the target reflects one or more of the four priority areas of the Gender Action Plan (i.e. 1. participation in decision making; 2. economic empowerment; 3. land rights and access to resources; 4. knowledge and capacity building) this can be also specified.
### Strategic objectives

**Strategic objective 3: To mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems**

<table>
<thead>
<tr>
<th>SO 3</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>Drought indicators are variables or parameters used to describe drought conditions, such as precipitation, temperature, streamflow, groundwater and reservoir levels, soil moisture and snowpack. They typically form an essential component of national drought management plans or policies. The 2018 reporting will detail which drought indicators are in use in the countries and progress towards the strategic objective.</td>
</tr>
<tr>
<td><strong>Nationally relevant indicators</strong></td>
<td>Strategic objective 3 was newly introduced in the UNCCD 2018–2030 Strategic Framework and there is currently no progress indicator agreed upon to report on progress towards this objective. In decision 15/COP.13, Parties requested the Committee on Science and Technology to assist in the work relating to the establishment of a specific indicator for the strategic objective on drought. Meanwhile Parties are encouraged to indicate which indicators they are using to estimate progress towards strategic objective 3, any related targets and/or specific expected impacts. For those countries that have not yet determined which indicators to use in achieving SO3, the World Meteorological Organization (WMO) has compiled a ‘Handbook of Drought Indicators and Indices’. It outlines a range of indicators and indices, their input parameters, applications, strengths weaknesses and ease of use. With this information, countries are encouraged to determine which indicators are nationally relevant. The WMO doesn’t provide a prescriptive approach, rather, on the basis of a list of questions, provides guidance for the selection of appropriate indicators. For reporting purposes, countries are requested to list the indicators employed to estimate their progress towards SO3, any related targets and/or specific expected impacts. For each indicator, provide a qualitative assessment from the drop-down menu.</td>
</tr>
<tr>
<td><strong>Complementary information</strong></td>
<td>If countries are already using indicators to inform Drought Early Warning Systems (DEWS) and decision support tools for managing risk in drought-affected sectors, or as validation for modelled or remotely-sensed indicators of drought, they are encouraged to upload this information to the PRAIS.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SO3</th>
<th>Voluntary targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>Voluntary targets can be set to achieve SO3 and therefore “to mitigate, adapt to, and manage the effects of drought in order to enhance resilience of vulnerable populations and ecosystems”. The 2018 reporting will describe the countries’ level of ambition in achieving SO3.</td>
</tr>
<tr>
<td><strong>Targets</strong></td>
<td>List any target relevant to SO3 that your country has set and indicate the expected year of achievement and the level of application (e.g., national, sub-regional).</td>
</tr>
<tr>
<td><strong>Complementary information</strong></td>
<td>Countries are encouraged to indicate whether the targets related to SO3 have been adopted or officially endorsed and if yes, by which body (institution, government agency, regulation). Furthermore, countries are encouraged to outline the linkages that these targets have with Sustainable Development Goals (SDG) and opportunities to create leverage and synergies with their countries’ climate and biodiversity agendas. In cases where voluntary targets relevant to SO 3 include a gender dimension, countries are invited to provide this information, specifying year and level of application. If the target reflects one or more of the four priority areas of the Gender Action Plan (i.e. 1. participation in decision making; 2. economic empowerment; 3. land rights and access to resources; 4. knowledge and capacity building) this can be also specified.</td>
</tr>
</tbody>
</table>

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45 [https://library.wmo.int/pmb ged/wmo_1173_en.pdf](https://library.wmo.int/pmb ged/wmo_1173_en.pdf)
**Strategic objectives**

*Strategic objective 4: To generate global environmental benefits through effective implementation of the United Nations Convention to Combat Desertification*

---

**SO4-1**

**Trends in carbon stocks above and below ground**

Trends in carbon stock above and below ground is a multi-purpose indicator used to measure progress towards both strategic objectives 1 and 4. Quantitative data and a qualitative assessment of trends in this indicator are reported under strategic objective 1, progress indicator SO1-3.

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**SO4-2**

**Trends in abundance and distribution of selected species**

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**Red List Index**

**Rationale**

In decision 22/COP.11, the Global Wild Bird Index was adopted as the metric to be used with the understanding that this metric will be potentially replaced by an indicator measuring trends in ecosystem functional diversity once system understanding and data production allows. The UNCCD 2018–2030 Strategic Framework states that indicators for strategic objectives should be reviewed and fine-tuned, as necessary and appropriate, in consideration of the reporting system/indicators for the Sustainable Development Goals (SDGs) and with reference to the follow-up and review processes of the 2030 Agenda for Sustainable Development, the Rio conventions and other relevant Multilateral Environmental Agreements in order to improve their synergetic implementation and avoid duplication.

Based on the above, it is recommended that the Red List Index (RLI) be used as the metric for reporting. The RLI is also SDG indicator 15.5.1 and one of the indicators for the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. The RLI estimates trends in the overall extinction risk of sets of species, in order to determine the trends in biodiversity status.

The 2018 reporting will present classification of countries based on their RLI value, demonstrating changes over time.

**Quantitative data**

The Red List Index (RLI) is a measure of change in aggregate extinction risk across groups of species. It is based on genuine changes in the number of species in each category of extinction risk on The International Union for Conservation of Nature (IUCN) Red List of Threatened Species. The RLI value ranges from 0 to 1 (Table 14).

While the reporting template is not pre-filled for this indicator, countries can refer to available data sources. The RLI is compiled from the IUCN Red List of Threatened Species. Furthermore, as the RLI is also an SDG indicator (SDG indicator 15.5.1), country data can be accessed and downloaded directly from the SDG database.

---

**Table 14. The Red Index limit descriptions**

<table>
<thead>
<tr>
<th>Red List Index</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The maximum possible contribution to the global index (i.e., all species in the region are classified as extinct)</td>
</tr>
<tr>
<td>1</td>
<td>The minimum contribution to the global index (i.e., all species in the region are classified as least concern; biodiversity loss has been halted)</td>
</tr>
</tbody>
</table>

---

50 http://www.iucnredlist.org/
51 https://unstats.un.org/sdgs/indicators/database/?Indicator=15.5.1#indicatorPanel
Strategic objectives

Strategic objective 4: To generate global environmental benefits through effective implementation of the United nations Convention to Combat Desertification

Sources of information

Countries are to specify the source of information.

Qualitative assessment

Interpretation of the indicator

Some generic guidance for the interpretation of the RLI is provided in Table 15.

Table 15 Guidance for the interpretation of Red Index trends

<table>
<thead>
<tr>
<th>Trend over time</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downward</td>
<td>Expected rate of future species extinctions is worsening (i.e., the rate of biodiversity loss is increasing)</td>
</tr>
<tr>
<td>Upward</td>
<td>Expected rate of species extinctions is abating (i.e., the rate of biodiversity loss is decreasing). However, biodiversity loss has not stopped.</td>
</tr>
<tr>
<td>Horizontal line</td>
<td>Expected rate of species extinctions is remaining the same. However, biodiversity loss has not stopped.</td>
</tr>
</tbody>
</table>

To further assist the interpretation, countries are encouraged to visualize their respective RLI dataset by means of a graph. This may be undertaken in Excel after downloading the data. Figure 5 provides an example of an RLI graph, which clearly illustrates a downward trend. The grey shading shows 95% confidence intervals.

While it may be difficult to attribute specific causal factors to changes in RLI, countries are encouraged to indicate which direct and/or indirect drivers are presumably behind the observed changes. Any deviation from the guidance provided should be reported and justified in the ‘comment’ column of the reporting table.

---

Figure 5. Example of Red List Index (RLI) of species survival, weighted by the fraction of each species’ distribution occurring within a country

**Strategic objectives**

**Strategic objective 4:** To generate global environmental benefits through effective implementation of the United Nations Convention to Combat Desertification

<table>
<thead>
<tr>
<th>Hotspots/brightspots</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the RLI has been disaggregated at the sub-national level, by taxonomic group or by threatening process for example, the identification of hotspot/brightspots relating to this indicator is more viable. Countries are encouraged to ascertain whether or not these disaggregated RLI datasets exist.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those countries which produced a national RLI, are encouraged to upload it to the PRAIS. If graphs were used in the interpretation of the indicator, these should also be uploaded to the PRAIS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S04</th>
<th>Voluntary targets</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary targets can be set to achieve S04 and therefore “to generate global environmental benefits through effective implementation of the United Nations Convention to Combat desertification”. The 2018 reporting will present the countries’ level of ambition in achieving S04.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>List any target relevant to S04 that your country has set and indicate the expected year of achievement and the level of application (e.g., national, sub-regional).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries are encouraged to indicate whether the targets related to S04 have been adopted or officially endorsed and if yes, by which body (institution, government agency, regulation). Furthermore, countries are encouraged to outline the linkages that these targets have with Sustainable Development Goals (SDG) and opportunities to create leverage and synergies with their countries’ biodiversity agendas, as well as collaborate with other multilateral environmental agreements to enhance processes.</td>
</tr>
</tbody>
</table>

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[54] https://www.ibat-alliance.org/ibat-conservation/
### Additional indicators

**Strategic objectives**

Additional indicators for strategic objectives 1, 2 and 4

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional indicators at national and sub-national scales can assist in both interpreting and understanding the indicators associated with each strategic objective, and can address locally-relevant issues.</td>
</tr>
<tr>
<td>The 2018 reporting will analyze which additional indicators are in use in the countries and preliminary progress towards the strategic objective.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nationally relevant indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries are encouraged to identify complementary indicators that address their national and sub-national specificities and will strengthen the interpretation of the common global indicators.</td>
</tr>
<tr>
<td>For example, the three progress indicators SO1-1, SO1-2 and SO1-3 address key aspects of land-based natural capital, but additional indicators may be required to fully assess trends in land-based ecosystem services.55 These may include indicators/metrics for other SDGs or other national indicators.</td>
</tr>
<tr>
<td>At the national level, process indicators can also be used to monitor actions taken and thus estimate progress in implementation.</td>
</tr>
<tr>
<td>Additional indicators can be both quantitative and qualitative (i.e. narrative indicators) in nature.56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complementary information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries are encouraged to upload data and information relevant to the additional indicators to the PRAIS.</td>
</tr>
<tr>
<td>In cases where gender related indicators are used to measure progress towards strategic objectives 1, 2 and 4 and related targets, countries are invited to provide this information and upload related data to the PRAIS. Gender related indicators could refer, for example, to gender equality and women’s social and economic empowerment equal, access to education, resources and knowledge. If countries are already using indicators, such as SDG 5 indicators57, they are encouraged to upload this information to the PRAIS.</td>
</tr>
</tbody>
</table>

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56 Decision 22/COP.11

57 https://sustainabledevelopment.un.org/sdg5
Strategic objectives

Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level

S05-1 Trends in International Bilateral and Multilateral Official Development Assistance

Rationale

Questions under this indicator would be answered by Parties not belonging to an implementation annex i.e. development partners. The table is intended to collect data from development partners on bilateral Official Development Assistance (ODA).

Quantitative data

For Parties that are members to the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD), this table is pre-populated with desertification Rio marker data published by the OECD in the Creditor Reporting System (CRS). This information should be reviewed and, if needed, amended. If the data is amended, references for the revised data should be specified under ‘Sources of information’. Parties that are not DAC members should report their bilateral ODA commitments for activities relevant to the implementation of the Convention.

The table is intended to collect data from DCPs on bilateral Official Development Assistance (ODA) committed in each of the four years by DCPs for activities relevant to the implementation of the Convention. Contributions to multilateral organizations should not be included in this table. If applicable, earmarked multilateral contributions for activities relevant to the implementation of the Convention should be reported under ‘Complementary information’.

Sources of information

Please specify any sources of data used as a reference for the above table.

Complementary information

Please provide any complementary information you deem relevant. Such information could include, for example, trends influencing ODA commitments for activities relevant to the implementation of the Convention, earmarked contributions to multilateral organizations for activities relevant to the implementation of the Convention, main type of projects financed, focus sectors, countries or regions, etc. This field could also be used to provide specific guidance for the interpretation of data reported under this indicator.

In case financial resources were allocated to support gender responsive implementation of the Convention that can be assigned to one or more of the four priority areas of the Gender Action Plan (GAP), Parties are invited to upload this information. The four priority areas of the Gender Action Plan are as follows: a) participation in decision making, b) economic empowerment, c) land rights and access to resources, d) knowledge and capacity building. The information could be specified with reference to the GAP priority area and the allocated amount by year.

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Strategic objectives

Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level

S05-2  Trends in domestic public resources

Rationale

Questions under this indicator would be answered by Parties belonging to an implementation annex. The indicator aims to provide insights in the trends relating to the spending of domestic and public resources.

Trends in amount of domestic desertification financing

For the four years specified for this question, please indicate the trend that describes the national-level financing committed for activities relevant to the implementation of the Convention.

Sources of information

Please specify any sources of data used as a reference to answer the previous question.

Complementary information

Please provide any complementary information you deem relevant. Such information could include, for example, driving factors or causes behind the trends indicated above and how they relate to financing implementation of the Convention, main types of projects, as well as sectors, domains or sub-national regions where national-level financing has focused on to the greatest extent. This field could also be used to provide specific guidance for the interpretation of data reported under this indicator.

In case financial resources were allocated to promote gender responsive implementation of the convention that can be assigned to one or more of the four priority areas of the Gender Action Plan (GAP) e.g 1) Participation in decision making; 2) economic empowerment; 3) land rights and access to resources; 4) knowledge and capacity building, countries are invited to upload this information. The information could be specified with reference to the GAP priority area the allocated amount by partner and year.

S05-3  Trends in number of co-financing partners

Rationale

Questions under this indicator shall be answered by all Country Parties. The indicator aims to provide insights in the trends relating to the number of co-financing partners relevant for UNCCD implementation.

Trends in number of co-financing partners

For the four years specified for this question, please indicate the trend in the number of co-financing partners involved in activities relevant to the implementation of the Convention.

Sources of information

Please specify any sources of data used as a reference to answer the previous question.

Complementary information

Please provide any complementary information you deem relevant. Such information could include, for example, driving factors behind the trends indicated above, their perceived influence to present and future financing of the implementation of the Convention, main types of projects, sectors, countries or...
Strategic objectives

Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level.

regions that co-financing partners have focused on to the greatest extent. This field could also be used to provide specific guidance for the interpretation of data reported under this indicator.

In case strategic partnerships were established to co-finance to promote gender responsive implementation of the convention that can be assigned to one or more of the four priority areas of the Gender Action Plan (GAP) e.g. 1) participation in decision making; 2) economic empowerment; 3) land rights and access to resources; 4) knowledge and capacity building, countries are invited to upload this information. The information could be specified with reference to the GAP priority area the allocated amount by partner and year.
Strategic objectives
Strategic objective 5: To mobilize substantial and additional financial and non-financial resources to support the implementation of the Convention by building effective partnerships at global and national level

Resources mobilized from innovative sources of finance, including from the private sector

Rationale

Questions under this indicator would be answered by Parties belonging to an implementation annex. The indicator aims to provide an insight into how much of investments mobilized comes from innovative sources of finance, including form the private sector.

Trends in resources mobilized from innovative sources of finance

For the four years specified for this question, please indicate the trend in the amount of resources mobilized from innovative sources of finance, including from the private sector, for activities relevant to the implementation of the Convention.

For the purposes of answering this question, it should be noted that there is no universally agreed definition of “innovative sources of finance”. The Monterrey Consensus of the International Conference on Financing for Development, agreed in March 2002, recognizes the value of exploring such sources. A report by the World Bank refers to “non-traditional applications of solidarity, PPP [Public-Private Partnerships], and catalytic mechanisms that (i) support fundraising by tapping new sources and engaging investors beyond the financial dimension of transactions, as partners and stakeholders in development; or (ii) deliver financial solutions to development problems on the ground.”

A more recent discussion paper by the United Nations Development Programme (UNDP) identifies four broad categories of innovative finance mechanisms: taxes, dues or other obligatory charges on globalized activities; voluntary solidarity contributions; frontloading and debt-based instruments, such as through the issuance of bonds on international capital markets; and state guarantees, public-private incentives, insurance and other market-based mechanisms.

Sources of information

Please specify any sources of data used as a reference to answer the previous question.

Complementary information

Please provide any complementary information you deem relevant. Such information could include, for example, driving factors behind the trends indicated above, main types of projects, sectors, countries or regions that innovative financing has focused on to the greatest extent. This field could also be used to provide specific guidance for the interpretation of data reported under this indicator.

About the implementation framework

Overview
The implementation framework describes specific aims that are important for meeting the strategic objectives and furthermore provides opportunities to Parties to share knowledge and experiences obtained from the national level. It focuses on three broad areas and splits those three areas into 3 to 5 aims respectively:

a) Financial and non-financial resources
Under this area, Parties are invited to describe how they have successfully mobilized financial and non-financial resources to implement the Convention. Parties are also invited to report on how they have used LDN as a catalyst for leveraging investments, and improved the use of existing and/or innovative financial processes and institutions.

(b) Policy and planning
Parties’ experiences in the development, implementation and monitoring of national action programmes, the establishment of policies and enabling environments, leveraging synergies and improving drought preparedness are among the topics to be reported on under this area.

(c) Actions on the ground
Parties are invited to share stories of successful implementation practices used to achieve sustainable land management, increase restoration efforts and/or rehabilitate ecosystems, and how they are establishing effective systems for sharing information and knowledge.

Approach to reporting
In 2018, reporting on the implementation framework is done through qualitative reporting and on a voluntary basis. Related section of the reporting template is structured according to the three areas and their aims, and for most of them, the information to be provided is about:

- Preparedness to report on the topic,
- Overview of some essential features through multiple-choice question(s),
- Complementary information on the topic (countries’ experiences as narrative),

For some sections in the implementation framework there is also a section where Parties who support others in the implementation process can provide their stories on how they did this and in which context.

Review
The information that is provided through reporting on the implementation framework will be used for interactive CRIC sessions. The reporting manual provides advice on the specific content and type of information that is required in the narratives concerning each area/aim and hence contributes to a focused reporting on current UNCCD priorities and enables a lively, targeted exchange during interactive sessions.

Guidance provided in this manual
Many questions in the sections of the reporting template relating to the implementation framework are self-explanatory, and guidance on them is provided only for selected terminology that may need specification.

For the narratives, advice is given on the content and type of information that is sought.
Increasing mobilization of financial and non-financial resources for the implementation of the Convention from international and domestic, public and private sources as well as from local communities, including non-traditional funding sources, and climate finance.

### First question terminology:
- Financial resources: for example, funding from grants or credit
- Non-financial resources: for example, goods, material, capacity building or volunteer time

Please check only one box.

### Second question terminology:
- Non-traditional funding sources: for example, private investments and public-private partnerships, remittances, solidarity taxes, risk guarantees, insurances or similar
- Climate finance: The Adaptation Fund, Green Climate Fund, GEF climate focal area and its special funds focusing on climate, dedicated multilateral and bilateral climate funds, and carbon markets.

Please check all relevant boxes.

### Narrative

Please provide information on your experience(s) in increasing mobilization of financial and non-financial resources for the implementation of the Convention. In the description of each experience, please include information of the type of resources that were mobilized, the source of funding, the purpose of funding (brief description of the project/activity) and the approach/procedure that was used to mobilize resources. Please explain also how this experience represents an increase in resource mobilization (what is different about it) and what do you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

### Narrative on support provided

Please provide one or more examples on your country’s support to mobilization of financial and non-financial resources for the implementation of the Convention in another country. In the description of each example of support that was provided, please include information of the partner that was supported, the type of resources that were mobilized, the source of funding, the purpose of funding (brief description of the project/activity) and the approach/procedure that was used to mobilize resources. Please explain also how this example was successful (what is different about it) and what do you consider as the main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

### Taking advantage of the opportunity of using land degradation neutrality as a framework to enhance the coherence, effectiveness and multiple benefits of investments.

Terminology: The term Land Degradation Neutrality (LDN) refers to target 15.3 of the Sustainable Development Goals (SDGs) and its interpretation under the UNCCD through, for example, participation in the LDN target-setting programme (LDN-TSP). The LDN concept is an approach that counterbalances the expected loss of productive land with the recovery of degraded areas highlighting the multiple benefits of the land but also challenges faced by it. The LDN concept creates linkages between land-restoration, the actions to mitigate and adapt to climate change and to promote biodiversity and food security, also it addresses socio-economic issues such as resilience-building and women empowerment.

This section of the reporting is about clarifying how the implementation of the LDN concept has influenced/ is influencing investments in the above context. In particular, the aim is to find out whether the implementation of the LDN concept has enabled support to land activities from different funding sources, and assisted in bringing together different types of investors.

Please provide information on your experience(s) in using LDN as a framework to enhance the coherence, effectiveness and multiple benefits of investments. Such experiences may include, for example, supporting land activities through investments targeting climate action, biodiversity, forests, water and similar; or engaging a variety of funding sources (governments, financial institutions, private
Improving the use of existing and/or innovative financial processes and institutions (such as the Global Environment Facility (GEF) or other newer funds)

<table>
<thead>
<tr>
<th>Terminology:</th>
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</thead>
<tbody>
<tr>
<td>- Existing financial processes: National budgets, bilateral development cooperation and multilateral development banks</td>
</tr>
<tr>
<td>- Innovative financial processes: Climate finance (the Adaptation Fund, Green Climate Fund, dedicated multilateral and bilateral climate funds other than those of the GEF, and carbon markets), private investments and public-private partnerships, remittances, solidarity taxes, risk guarantees, insurances or similar</td>
</tr>
</tbody>
</table>

**Narrative**

Please provide information on your experience(s) in improving the use of existing and/or innovative financial processes and institutions. Such experiences may include, for example, improvements to the investment climate (policies, regulations or approaches that facilitate investments in UNCCD implementation); increasing coherence among commitments (integration of LDN or land activities to financial considerations of other priorities and sectors); or improving capacity for the preparation of high quality project proposals.

In the description of each experience, please include information of the type(s) of financial processes that were addressed (existing, innovative, GEF or other) and the measures that were taken to improve the use of the financial process in concern. Please explain how the measures worked, and in what way they improved the use of the financial process. Please explain also what you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

**Narrative on support provided**

Please provide one or more examples on support your country has provided in to improve the use of existing and/or innovative financial processes and institutions in another country. In the description of each example of support that was provided, please include information of the type(s) of financial processes that were addressed (existing, innovative, GEF or other) and the measures that were taken to improve the use of the financial process in concern. Please explain how the measures worked, and in what way they improved the use of the financial process. Please explain also what you consider as main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).
Developing, implementing, revising and regularly monitoring, as appropriate, national, subregional and regional action programmes and/or plans as effective tools for UNCCD implementation

Action programmes

National Action programmes (NAPs) are one of the instruments to implement the Convention. They have been developed through participatory approaches involving many stakeholders at national level, subregional and regional levels and they encompass practical steps and measures that would contribute towards combating land degradation/desertification and mitigate the effects of drought. Many Parties have developed their NAPs and revisited them during the last years in order to align them with the previous Strategy.

Please provide information on your experience(s) in developing, implementing, revising and/or regularly monitoring a national, subregional or regional action programme. In the description of each experience, please include information of the type of action programme, main measures taken in developing, implementing, revising or regularly monitoring it, and the current status/results achieved. Please explain also how the measures that were taken support the action programme to be an effective tool for UNCCD implementation, and what you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

Establishing policies and enabling environments for promoting and implementing solutions to combat desertification/land degradation and mitigate the effects of drought including prevention, relief and recovery

Policies and enabling environment to address DLDD

This section of the reporting focuses on the policy and legislative measures to combat land degradation/desertification and mitigate the effects of drought. Desertification and drought are considered slow-onset disasters. The following terminology is traditionally used in relation to disaster risk reduction and applies here to DLDD policies and legislative measures that enable:

- prevention: activities and measures to minimize existing and new disaster risks;
- relief: actions taken directly before, during or immediately after a disaster in order to save lives, reduce impacts, ensure public safety and meet the basic subsistence needs of the people affected;
- recovery: restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risks.

In the context of LDN, the set of prioritized actions/interventions that may be planned and then implemented in response to past or anticipated future land degradation is referred to as the “response hierarchy” of Avoid > Reduce > Reverse land degradation (Figure 4).

This section of the template can therefore also be used to share experiences related to the implementation of the LDN response hierarchy. For reporting purposes, it is acceptable to equate ‘prevention’ with ‘avoidance’, ‘relief’ with ‘reduction’ and ‘recovery’ with ‘reversion’.

This section of the 2018 reporting is also used for collecting information on policy measures concerning women’s participation and access to land.

Please provide information on your experience(s) in the setting of policy and legislative measures to combat land degradation/desertification and mitigate the effects of drought. Such experiences may include, for example, regulations limiting deforestation or managing grazing, establishment of a protected area, regulations prohibiting the use of certain chemicals or practices policies related to land use planning, or water harvesting, crop insurance, etc. to minimize drought risks, in general regulations and policies that would cover all agricultural practices and land use at national level, and even sub-regional level (transboundary agreements ensuring mobility of pastoralist, etc.).

In the description of each experience, please include information on the area
(national/local/subregional) covered by the policy or legislative measure. Describe briefly the policy or legislative measure; targeted audience, main provisions, and institution(s) adopting it. Please explain also how the measure has succeeded in meeting its aim, and what you consider as the main factors of success.

You may also provide information on your experience(s) in policy measures concerning mainstreaming gender in the implementation of the UNCCD. Such experiences may involve, for example, enhancing women’s participation in decision-making concerning land, improving women’s land rights and access to related resources, or building women’s capacity for effective UNCCD implementation. In the description of each experience, please include information on the policy measure taken; main provisions, and by who/where is it used. Please explain also how the measure has succeeded in meeting its aim, and what you consider as the main factors of success.

You are invited to use experiences from the LDN target-setting process, when applicable.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

Please provide one or more examples on support your country has provided in the setting of policy and legislative measures to combat land degradation/desertification and mitigate the effects of drought in another country. In the description of each example please inform what is the area (national/local) covered by the policy or legislative measure. Describe briefly the policy or legislative measure; targeted audience, main provisions, and institutions adopting it. Please explain also how the measure has succeeded in meeting its aim, and what you consider as the main factors of success.

You may also provide information on support your country has provided in setting of policy measures concerning mainstreaming gender in the implementation of the UNCCD, in another country. In the description of each experience, please include information on the policy measure taken; main provisions, and by who/where is it used. Please explain also how the measure has succeeded in meeting its aim, and what you consider as the main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

Please provide information on your experience(s) in leveraging synergies and integrating DLDD into national plans related to other MEAs and international commitments, as appropriate, within their respective mandates, optimizing efficacy and eliminating duplication of efforts.

Terminology:
- Leveraging synergies: In activities focusing on DLDD, generating simultaneous benefits and added value to other MEAs or international commitments
- Integrating DLDD: In the planning and implementation concerning other MEAs and international commitments, ensuring that DLDD is also addressed where possible

Please provide information on your experience(s) in leveraging synergies and integrating DLDD into national plans related to other MEAs and international commitments. Such experiences may involve, for example, integration of nationally determined contributions (NDCs) and/or adaptation plans on climate change, and/or national biodiversity targets (AICHI targets), into LDN targets or NAPs for UNCCD implementation. They may also include using Sustainable Land management (SLM) practices as a holistic approach to achieve the objectives of the three Rio Conventions and the SDG 15.3 primarily but also relevant targets for SDG 1,2,3,6 and SDG 13.

For each experience, please inform which activities or plans (LDN targets, climate or biodiversity commitments or plans, SDGs, UNCCD NAP or similar) were involved and include information on their linkages. Please explain also what/how synergies were generated and what do you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).
Mainstreaming DLDD as appropriate into economic, environmental and social policies, with a view to increasing the impact and effectiveness of the implementation of the Convention

**Narrative**

Please provide information on your experience(s) in mainstreaming DLDD into economic, environmental and social policies. Such experiences may include, for example, using sustainable land management for approaches and policies concerning income generation/poverty reduction, gender equality, unemployment, migration, disaster preparedness, energy efficiency or wildlife conservation, among others.

In the description of each experience, you may include the rationale behind the mainstreaming of DLDD into the policy in concern. Also include information on the coverage/users of the policy, and the process that was carried out to prepare for and decide on the DLDD mainstreaming. Please explain how DLDD mainstreaming to this particular policy increases the impact and effectiveness of the implementation of the Convention and generates added value to the policy, and what you consider as the main factors of success. You may refer to the question above on the establishment of policies to elaborate more on certain examples you have included.

You are invited to use experiences from the LDN target-setting process, when applicable.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

**Establishing national policies, measures and governance for drought preparedness and management, including drought contingency plans according to the mandate of the Convention.**

**Terminology:**

Drought contingency plan: a national or subnational plan that outlines how drought will be managed, what are the possibilities for drought to happen, what are the expected impacts and what are the measures that will be taken to minimize impacts.

**Narrative**

Please provide information on your experience(s) in establishing national (sub-national) drought policies and plans and drought risk mitigation measures taken to reduce impacts. Such experiences may include, for example, establishment of a multi-stakeholder coordination mechanism (body) on drought preparedness, establishment and maintenance of a drought monitoring and early warning system, conducting drought vulnerability and impact assessment at various levels (sector wide, regional or national), or implementation of practical drought risk mitigation measures (such as water harvesting, crop insurance, irrigation practices, etc.). They may also be about gender-responsive drought management, preparedness and resilience building. In this regard, of special interest would be your experience(s) on the issues considered and the approach/procedure used to develop drought preparedness and/or contingency plans.

In the description of each experience, you may include information on the coverage (national/local) of the drought policy/measure, and list the authorities and other main stakeholders that are involved in its implementation. Please describe briefly the main aims and activities of the drought policy/measure, the action taken, and the results achieved so far. Explain also what you consider as the main factors of success.

You are invited to use experiences from the LDN target-setting process, when applicable. Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

**Narrative on support provided**

Please provide one or more examples on the support your country has provided in establishing national policies, measures and governance for drought preparedness and management in another country. In the description of each example of support that was provided, please include information on the coverage (national/local) of the drought policy/measure, and list the authorities and other main stakeholders that are involved in its implementation. Please describe briefly the main aims and activities of the drought policy/measure, and the action taken /results achieved so far. Explain also what you consider as the main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).
Implementing sustainable land management practices

List of SLM practices: Please check all relevant boxes
Definitions of SLM practices can be found in the glossary published on the PRAIS website.

Narrative
Please provide summary information on one or more successful SLM practices. In the description of the practice, please include information of the type of practice, main activities, main stakeholders involved, and resources that were used. Please explain how this practice is a success (how it avoids or reduces land degradation in the long term), and what you consider as the main factors of success.

You are invited to use experiences from the LDN target-setting process, when applicable.

A full description of the best practice can be submitted through the WOCAT system to the dedicated knowledge base. Detailed information on how to submit: http://knowledge.unccd.int/WOCAT-SLM

Narrative on support provided
Please provide summary information on one or more examples on the support your country has provided to implement successful SLM practices in another country. In the description of the practice, please include information of the type of practice, main activities, main stakeholders involved, duration, and resources that were used. Please explain how this practice is a success (how it avoids or reduces land degradation in the long term), and what you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately one page of normal text in font size 12). If your practice is already included in the WOCAT system or other similar online database, please include a link to it in this space.

Implementing restoration and rehabilitation practices in order to assist with the recovery of ecosystem functions and services

Terminology: Restoration and rehabilitation are approaches aiming to reverse land degradation and improve the land-based natural capital.
- Restoration: assisting the recovery of an ecosystem that has been degraded by re-establishing the pre-existing ecological structure and function.
- Rehabilitation: reinstating ecosystem functionality, with focus on the provision of goods and services rather than restoration

Narrative
Please provide information on your experience(s) in implementing restoration and rehabilitation practices. Such practices may include, for example, soil nutrient replenishment through organic amendment, water harvesting, counter-erosion measures, reforestation, etc.

In the description of the practice, please include information of the type of practice, main activities, the ecosystem in question, main stakeholders involved, and resources that were used. Please explain how this practice is a success (how it supports the recovery of ecosystem functions and services in the long term), and what you consider as the main factors of success. If the restoration and rehabilitation refer to cases/examples that were mentioned in the question on SLM, you may refer to them or elaborate more specifically on one or more.

You are invited to use experiences from the LDN target-setting process, when applicable.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

Narrative on support provided
Please provide one or more examples on the support your country has provided in implementing restoration and rehabilitation practices in another country. In the description of the practice, please include information of the type of practice, main activities, areas/ecosystems restored and rehabilitated main stakeholders involved, and resources that were used. Please explain how this
Implementation framework
Action on the Ground

practice is a success (how it supports the recovery of ecosystem functions and services in the long term), and what you consider as the main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately of normal text in font size 12).

Developing and operationalizing drought risk management, monitoring and early warning systems and safety net programmes

Narrative

Please provide information on your experience(s) in developing and operationalizing drought risk management, monitoring and early warning systems and safety net programmes. Such experiences may include, for example, capacity building and extension services, national strategies in place that cover the drought risk management, and how to monitor the early warning systems. The information may address questions relating to: what are the current procedures/challenges on early warning systems in your country? What mechanisms are in place for communicating and liaising drought monitoring and early warning information between national institutions in your country? What are the causes/reasons of vulnerability to drought in your country? What criteria are used to prioritize vulnerability? What, in general, are challenges for developing a national drought policy in our country? And what steps are taken for establishing a drought policy in your country?

In the description of each experience, please provide a brief description of the type of activities, people involved, aim of the activities, and action that was taken. Please include, when possible, the outcomes of the activities and what you consider as the main factors of success.

You are invited to use experiences from the LDN target-setting process, when applicable.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).

Narrative on support provided

Please provide summary information on one or more examples on the support your country has provided in to develop and operationalize drought risk management, monitoring and early warning systems and safety net programmes. In the description of the practice, please include information of the type of practice, main activities, main stakeholders involved, duration, and resources that were used. Please explain how this practice is a success (how it avoids or reduces land degradation in the long term), and what you consider as the main factors of success.

Each example that you report should be provided as a text, and it should not exceed 1000 words (approximately one page of normal text in font size 12).

Promoting alternative livelihoods

Terminology:
In this reporting, alternative livelihoods refers to
- Subsistence and income generation using natural resources in a (new) manner that prevents or reduces land degradation. This may include, for example, crop diversification, agroforestry practices, rotational grazing, or rain-fed and irrigated agricultural systems.
- Income generation activities that are not directly dependent on natural resources. These may include, for example, production of artisanal goods, renewable energy generation, eco-tourism, production of medicinal and aromatic plants, and aquaculture using recycled wastewater.

Narrative

Please provide information on your experience(s) in promoting alternative livelihoods. Such experiences may include, for example, capacity building and extension services, provision of incentives, infrastructure improvements (roads, telecommunication) or support to product processing and/or marketing.

In the description of each experience, please provide a brief description of the area/people that were involved, aim of the activities, and action that was taken. Include information on the role of women and
Establishing systems for sharing information and knowledge and facilitating networking on best practices and approaches to drought management

Terminology: Systems for sharing information and knowledge and facilitating networking on best practices and approaches to drought management covers a large selection, ranging from community-level farmers’ networks to national databanks and multi-country peer learning networks. These systems have a variety of functions, such as facilitating communication and alerts on drought, sharing of experiences, information and technologies, institutional coordination, provision of scientific data and information, and promoting the upscaling of good practices.

Please list the national or subnational information/knowledge sharing systems and networks on drought preparedness, when available. You are invited to also list subregional, regional and international systems and networks on drought preparedness that your country is part of. If possible, include a link to each system/network website. The list, together with the links, will be made available on the UNCCD Knowledge Hub.

In addition to information and knowledge sharing and networking on drought preparedness, this section of the 2018 reporting is used to collect information of support to women’s access to knowledge and technology.

Please provide information on your experience(s) in establishing or participating in systems for sharing information and knowledge and facilitating networking on best practices and approaches to drought management. You are also invited to provide information on your experiences in promoting women’s access to knowledge and technology.

In the description of each experience, please include information of the purpose and coverage (area/population) of the information/knowledge system or network, its specific focus/topic if any, the language(s) information is available in, and a brief description of the main activities. Please explain also how the system/network has been used / useful so far, and what you consider as the main factors of success.

Each experience that you report should be provided as a text, and it should not exceed 1000 words (approximately two pages of normal text in font size 12).
### Annex 1

#### Table 1. Correspondence between the land cover classes used for UNCCD reporting and the Land Cover Classification Scheme used in ESA’s Climate Change Initiative Land Cover dataset (CCI-LC) default dataset

<table>
<thead>
<tr>
<th>UNCCD Label</th>
<th>UNCCD Code</th>
<th>ESA CCI Code</th>
<th>ESA’s CCI-LC label</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tree-covered areas</strong></td>
<td>1</td>
<td>50</td>
<td>Tree cover, broadleaved, evergreen, closed to open (&gt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60</td>
<td>Tree cover, broadleaved, deciduous, closed to open (&gt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61</td>
<td>Tree cover, broadleaved, deciduous, closed (&gt;40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>62</td>
<td>Tree cover, broadleaved, deciduous, open (15-40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70</td>
<td>Tree cover, needle leaved, evergreen, closed to open (&gt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>71</td>
<td>Tree cover, needle leaved, evergreen, closed (&gt;40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72</td>
<td>Tree cover, needle leaved, evergreen, open (15-40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80</td>
<td>Tree cover, needle leaved, deciduous, closed to open (&gt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81</td>
<td>Tree cover, needle leaved, deciduous, closed (&gt; 40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>82</td>
<td>Tree cover, needle leaved, deciduous, open (15-40%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>90</td>
<td>Tree cover, mixed leaf type (broadleaved and needle leaved)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>Mosaic tree and shrub (&gt;50%) / herbaceous cover (&lt; 50%)</td>
</tr>
<tr>
<td><strong>Grassland</strong></td>
<td>2</td>
<td>110</td>
<td>Mosaic herbaceous cover (&gt;50%) / tree and shrub (&lt;50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120</td>
<td>Shrubland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>121</td>
<td>Shrubland evergreen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>122</td>
<td>Shrubland deciduous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>130</td>
<td>Grassland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>140</td>
<td>Lichen and Mosses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>151</td>
<td>Sparse trees (&lt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>152</td>
<td>Sparse shrub (&lt;15%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>153</td>
<td>Sparse herbaceous cover (&lt;15%)</td>
</tr>
<tr>
<td><strong>Cropland</strong></td>
<td>3</td>
<td>10</td>
<td>Cropland, rainfed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>Herbaceous cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>Tree or shrub cover</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>Cropland, irrigated or post-flooding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30</td>
<td>Mosaic cropland (&gt;50%) / natural vegetation (tree, shrub, herbaceous cover) (&lt;50%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
<td>Mosaic natural vegetation (tree, shrub, herbaceous cover) (&gt;50%) / cropland (&lt; 50%)</td>
</tr>
<tr>
<td><strong>Wetland</strong></td>
<td>4</td>
<td>160</td>
<td>Tree cover, aquatic or regularly flooded in fresh or brakish water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>170</td>
<td>Tree cover, aquatic, regularly flooded in salt or brakish water, Mangroves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>180</td>
<td>Shrub or herbaceous cover, flooded, fresh/brakish water</td>
</tr>
<tr>
<td><strong>Artificial surfaces</strong></td>
<td>5</td>
<td>190</td>
<td>Urban areas</td>
</tr>
<tr>
<td><strong>Other land</strong></td>
<td>6</td>
<td>200</td>
<td>Bare areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>201</td>
<td>Consolidated bare areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>202</td>
<td>Unconsolidated bare areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>220</td>
<td>Permanent snow and ice</td>
</tr>
<tr>
<td><strong>Waterbodies</strong></td>
<td>7</td>
<td>210</td>
<td>Waterbodies</td>
</tr>
</tbody>
</table>
### Table 2. Description of the land cover classes used for UNCCD reporting

<table>
<thead>
<tr>
<th>UNCCD Label</th>
<th>ESA's CCI-LC label</th>
</tr>
</thead>
</table>
| **Tree-covered areas** | This class includes any geographic area where the vegetative cover is dominant (cover >15%) and consists of a main layer of natural trees with a cover between 15% - 100%:  
- Tree cover closed to open: >15%;  
- Trees cover open: 15-40%;  
- Tree cover closed: 40-100%;  
- Other types of plants (shrubs and/or herbs) can be present, even with a density higher than trees: Mosaic trees and shrubs (>50%) / herbaceous cover (< 50%) |
| **Grassland**          | This class includes any geographic areas dominated by a vegetative cover of 15% or more, it includes natural shrubs life forms, herbaceous plants (e.g. Forbs and Graminoids, grasslands, prairies, steppes and savannahs) or a combination of them, irrespective of different human and/or animal activities, such as: grazing, selective re-management etc; or consist of life forms of Lichens/Mosses. A separate cover condition exists for Lichens/Mosses that can be only applied if this life form contributes at least 25% to the total vegetative cover.  
- Trees can be present in scattered form if their cover is less than 15%.  
- This class also includes mosaic natural vegetation of herbaceous (>50%) and shrub or trees (<50%)  
- This class also includes any geographic areas were the cover of natural vegetation is between 2% and 15% (sparse):  
- natural shrubs cover open to closed (>15%); or  
- natural herbaceous plants cover open to closed (>15%); or  
- sparse natural vegetation (herbaceous, shrubs and trees) (< 15%);  
- mosaic herbaceous cover (>50%) / tree and shrub (<50%). |
| **Cropland**           | This class includes any geographic areas with a predominant cultivated surface cover:  
- herbaceous crops;  
- woody crops.  
- The class is composed of a main layer of cultivated herbaceous plants (graminoids or forbs), including herbaceous crops used for hay, and/or of a main layer of permanent cultivated tree or shrub crops and includes all types of orchards and plantations (fruit trees, coffee and tea plantation, oil palms, rubber plantation, Christmas trees etc.).  
- All the non-perennial crops that do not last for more than two growing seasons and crops like sugar cane where the upper part of the plant is regularly harvested while the root system can remain for more than one year in the field are included in this class.  
- The class also includes croplands rainfed, irrigated or post-flooding and aquatic crops, which are standing in water over extensive periods during their cultivation time (e.g. paddy rice, tidal rice and deepwater rice).  
- This class also includes crop fields from small size (< 2ha) to medium large size (>2ha).  
- Areas planted with trees for afforestation purposes and forest plantations are included in this class.  
- The vegetative cover can be present, it depends from the time of observation during the crops period.  
- This class also includes multiple or layered crops composed of at least two layers of cultivated woody and herbaceous crops. A common case is the presence of one layer of woody crops (trees or shrubs) and another layer of herbaceous crop, (such as for olive trees with wheat fields in the Mediterranean area and intense horticulture, oasis or typical coastal African agriculture, where herbaceous fields are covered by palm trees, etc. etc.).  
- This class also includes different layers of cultivated plants combined with significant areas of natural vegetation:  
- mixed herbaceous and woody crops;  
- mosaic crops (>50%) / natural vegetation (<50%);  
- mosaic natural vegetation (>50%) / crops (< 50%). |
| **Wetland**            | This class includes any geographic areas that are transitional between pure terrestrial and aquatic systems, where the water table is usually at or near the surface or the land is covered by shallow water. The vegetative cover is significantly influenced by water and dependent on flooding (e.g. marshes, swamps and aquatic beds).  
- The class includes any area dominated by trees, shrubs or herbaceous vegetation (cover of 10% or more) that is seasonally or permanently flooded with inland fresh water or by salt and/or brackish water located in the coastal areas or in the deltas of rivers. It includes coastal mangroves. Flooding must persist for at least 2 months per year to be considered regular (water persistence from 2 to 12 months per year). Occasionally-flooded vegetation within a terrestrial environment is not included in this class.  
- It includes:  
  - Inland marshes,  
  - Peat bogs,  
  - Intertidal flats. |
| **Artificial surfaces**| The class is composed of any type of areas with a predominant artificial surface cover as a result of human activities. Natural vegetation can also be present, but it isn’t dominant respect the artificial surface. Any urban or associated area is included in this class, as for example urban parks or sport facilities. The class also includes industrial areas, waste dump deposit and extraction sites:  
- construction sites (cities, green urban areas, towns and transportation as road and rail networks and associated land),  
- port and airport areas,  
- mineral extraction (open mines and quarries) or waste disposal,  
- continuous and discontinuous urban fabric and industrial or commercial units. |
### Other land

This class includes any geographic area dominated by natural abiotic surfaces (bare soil, sand, rocks, etc.) that do not have an artificial cover as a result of human activities and where the natural vegetation is absent or almost absent (covers less than 2-4%). Included are bare rock areas, sands and deserts.

The class also includes areas regularly flooded by inland water (lake shores, river banks, salt flats etc.). It excludes coastal areas affected by the tidal movement of salt water.

It includes:
- beaches, dunes, sands and deserts,
- bare rock areas,

This class includes any geographic area covered by perennial snow or glaciers persistently for 10 months or more.

### Waterbodies

This class includes any geographic area covered by inland water bodies with a water persistence of 12 months per year. In some cases the water can be frozen for part of the year (less than 10 months). This class refers to areas that are naturally or artificially covered by water, such as lakes and/or rivers. It includes areas that are covered by water due to the construction of artefacts such as reservoirs, canals, artificial lakes, etc. Without these, the area would not be covered by water.

The class also includes coastal water bodies composed on the basis of geographical features in relation to the sea (lagoons and estuaries). Because the geographic extent of water bodies can change, boundaries must be set consistently with this class according to the dominant situation during the year and/or across multiple years.

It includes:
- Lakes, rivers and streams (natural/artificial, standing/flowing, inland/sea)
- Artificial reservoirs
- Coastal lagoons
- Estuaries
Annex 2

Table 1. Outline of equations used in the derivation of SDG 15.3.1 61

<table>
<thead>
<tr>
<th>Equation No.</th>
<th>Equation Description</th>
<th>Equation/Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The area degraded in the monitoring period $t_n$ within land cover class $i$ is estimated by summing all the area units within the land cover class determined to be degraded plus all area units that had previously been defined as degraded and that remain degraded;</td>
<td>$A(Degraded\text{)}<em>{i,n} = \sum</em>{j=1}^{m} A_{\text{recent}<em>{i,n}} + A</em>{\text{persistent}_{i,n}}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(Degraded\text{)}_{i,n}$ is the total area degraded in the land cover class $i$ in the year of monitoring $n$ (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A_{\text{recent}_{i,n}}$ is the area defined as degraded in the current monitoring year following 1OAO assessment of the sub-indicators (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A_{\text{persistent}_{i,n}}$ is the area previously defined as degraded which remains degraded in the monitoring year following the 1OAO assessment of the sub-indicator</td>
</tr>
<tr>
<td>2.</td>
<td>The proportion of land cover type $i$ that is degraded is given by;</td>
<td>$P_{i,n} = \frac{A(\text{Degraded} \text{)}<em>{i,n}}{A(\text{Total} \text{)}</em>{i,n}}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$P_{i,n}$ is the proportion of degraded land in that cover type $i$ in the monitoring period $n$;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(Degraded)_{i,n}$ is the total area degraded in the land cover type $i$ in the year of monitoring $n$ (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(\text{Total})_{i,n}$ is the total area of land cover type $i$ within the national boundary (ha)</td>
</tr>
<tr>
<td>3.</td>
<td>The accumulation degraded land across $m$ land cover classes within the monitoring period $n$ is given by;</td>
<td>$A(Degraded)<em>{n} = \sum</em>{i=1}^{m} A(Degraded)_{i,n}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(Degraded)_{i,n}$ is the total area degraded in the year of monitoring $n$ (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(Degraded)_{i,n}$ is the total area degraded in the land cover type $i$ in the year of monitoring $n$;</td>
</tr>
<tr>
<td>4.</td>
<td>The total proportion of land that is degraded over total land area is given by:</td>
<td>$P_{n} = \frac{A(Degraded)<em>{n}}{\sum</em>{i=1}^{m} A(\text{Total})_{i,n}}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$P_{n}$ is the proportion of land that is degraded over total land area;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(Degraded)_{n}$ is the total area degraded in the year of monitoring $n$ (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$A(\text{Total})$ is the total area within the national boundary (ha);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The proportion is converted to a percentage value by multiplying by 100.</td>
</tr>
</tbody>
</table>