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SUPPORTING IMPLEMENTATION OF AICHI BIODIVERSITY TARGET 12

Note by the Executive Secretary

1. The Executive Secretary hereby provides, for the information of participants in the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity, a document prepared by the International Union for Conservation of Nature on supporting implementation of Aichi Biodiversity Target 12 that relates and contributes to agenda item 10.

2. The document is being circulated in the form and language in which it was received by the Secretariat.

* UNEP/CBD/COP/13/1.

SUPPORTING IMPLEMENTATION OF AICHI BIODIVERSITY TARGET 12

Summary

Aichi Biodiversity Target 12: *By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained*.

Analysis and trends of current progress suggests that Target 12 will not be met by 2020.

This paper aims to assist Parties with implementation of Target 12, by providing a strategic approach to implementation based on:

- utilisation of both national and global datasets to aid decision-making, noting the gaps and benefits for both processes; and
- a proposal for a strategy to identify how to improve the conservation status of species.

Further, this paper provides a summary of progress towards Aichi Target 12, through data from The IUCN Red of Threatened Species™, the associated Red list Index (an indicator of progress towards Target 12), national red lists and informal reports of progress provided by Parties to the CBD at *CBD-Led Regional Capacity Building Workshops on the Implementation of Aichi Targets 11 and 12*.

The reports provided by Parties at the CBD-led Regional Workshops indicate that one key approach to species conservation action at the national level is through the development of species conservation action plans. While this clearly is useful method and there are many successful conservation outcomes as a result, this paper outlines several key actions that could also be undertaken by Parties and partners to enhance implementation of Aichi target 12 including:

- Identification of species that are globally threatened with extinction, in particular attention to those with a large proportion of their global distribution in the country, complemented with National Red List assessments to identify threatened species from taxonomic groups that are not yet comprehensively assessed globally;
- Improved interoperability of IUCN Red List assessments and national datasets, resulting in greater access to data for Parties, in order to inform decision making;
- A strategic approach to identifying how to reduce species extinction risk and decline rates;
- Prioritisation of areas for protecting threatened species using systematic conservation planning or by identifying Key Biodiversity Areas (KBAs) and ensuring their protection;
- Expansion or establishment of protected areas and effectively manage these to conserve priority sites (KBAs) identified for the protection of threatened species.
- Where targeted species-specific actions are needed, development of individual Species Action Plans;
- Implementation of policies and *in situ* actions to tackle illegal hunting, trapping, fishing, logging and collection of species, to ensure that use of species is sustainable.
- Monitoring the success of interventions by determining which species have improved protection based on the establishment of new protected areas or as a result of implementation of species specific action plans.

Finally, the paper indicates progress made by IUCN and its partners through the IBAT Partnership, to improve access to global datasets on species' extinction risk, protected areas, and Key Biodiversity Areas, to aid national decision-making and improve reporting of progress towards Aichi target 12.

1. Introduction

Aichi Biodiversity Target 12, "*By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained*" is a flexible framework to assist the establishment of national or regional targets.

The fourth edition of the Global Biodiversity Outlook (GBO4) indicates that Aichi Target 12 will not be met by 2020 based on current analysis and trends, because the trend towards greater extinction risk for several taxonomic groups has not decelerated since 2010. Short-term future projections of the extinction risk of species as a result of projected habitat loss predict a worsening situation.

This paper aims to assist Parties with implementation of Target 12, building on past decisions of the Conference of the Parties[1], a previous INF document provided by IUCN[2] (the International Union for Conservation of Nature) and its partners, and official documentation prepared by the Executive Secretary[3,4].

2. Components of Aichi Target 12

For effective implementation of this global target at the national level, Parties are invited to set their own nationally-relevant targets, taking into account national needs and priorities while also bearing in mind national contributions to assist the achievement of the global targets.

The process of taking actions towards achievement of Target 12 effectively breaks down into three components:

- Identifying which species are threatened with extinction (conservation assessments);
- Implementation of targeted and coordinated conservation action to halt extinctions and improve the status of those species found to be threatened; and

There are also supporting actions that could be undertaken at both the national and global level to enhance implementation of Target 12. These include the development of national policy measures, to ensure the mainstreaming of actions towards this Target within National Biodiversity Strategies and Action Plans (NBSAPs), and to assist delivery of other Aichi Targets at the national level.

The achievement of Aichi Target 12 requires action at the national level to address the direct and indirect drivers of change, and is therefore dependent on most of the other Aichi Biodiversity Targets[5]. For example, species may be conserved by protecting the sites where threatened species are located (Aichi Target 11), by combating particular threats (e.g. Targets 5, 6, 9 and 10), and through *ex situ* conservation (Target 13).

Species conservation is also connected to the delivery of the Sustainable Development Goals (SDGs), through goals 14 (*Conserve and sustainably use the oceans, seas and marine resources for sustainable development*) and 15 (*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*).

[1] COP 12 Decision XII/1 Annex 1: (c)*Evaluation and assessment* – The need for improving and promoting methodologies for assessing the status and trends of species and ecosystems, hotspots and conservation gaps as well as ecosystem functions, ecosystem services and human well-being, at the national, regional and global levels;
[2] UNEP/CBD/SBSTTA/19/INF/18
[3] UNEP/CBD/SBSTTA/20/INF/44
[4] UNEP/CBD/SBSTTA/REC/XIX/2
[5] Secretariat of the Convention on Biological Diversity (2014) Global Biodiversity Outlook 4. Montréal, 155 pages

Although the average risk of extinction for birds, mammals, amphibians, corals and cycads is not decreasing, several studies have shown that conservation action has prevented extinction[6] and recovered populations[7]. Across mammals, birds and amphibians, estimates suggest that observed trends in extinction risk would be at least 20% worse without conservation[8]; a more realistic estimate for a much smaller set of species suggests trends could be eight times worse[9]. Indeed, there have been some remarkable success stories for species, such as effective conservation of the Giant Panda, recently down-listed from Endangered to Vulnerable, and Tibetan Antelope, down-listed to near Threatened[10]. These studies suggest that conservation does work, but that the scale of implementation needs to be increased considerably.

GBO4 notes that one positive trend related to this target is an increasing proportion of site-based protection measures (through the expansion of protected areas, itself a component of Aichi Target 11), which are critical to the survival of threatened species; yet only 75 per cent of such sites are adequately covered by protected areas[11,12].

3. Documenting the Status of Species

a. The IUCN Red List

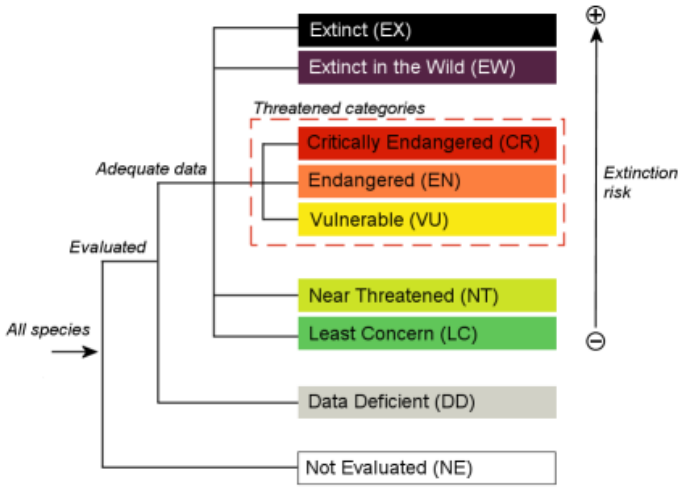
Parties can determine which species in their country are closest to global extinction using the global IUCN Red List of Threatened Species™ ("The IUCN Red List"), which is the most authoritative and widely accepted means of assessing species' extinction risk. It provides information and analyses on the status, trends and threats to species, and can be used to inform and catalyse conservation action. As of November 2016, The IUCN Red List contained global assessments for approximately 83,000 species, of which nearly 24, 000 (over 26%) are threatened with extinction (IUCN, 2016). Annex 1 provides a summary of the number of threatened species by major species groups on The IUCN Red List.

The IUCN Red List assesses the risk of extinction of a particular species according to a standardized methodology with quantitative thresholds that assign species to one of nine Red List categories (Figure 1). Assessments are mainly undertaken by a formalised and extensive international network of experts and scientists coordinated by 11 IUCN Red List Partner institutions, supported by IUCN Secretariat. The best available information is compiled to assess the extinction risk of a species – i.e. the data are robust, standardized and the entire process (as well as the underlying data) is independently reviewed by at least one person.

The IUCN Red List presently takes time to generate; it currently contains assessments for only 5% of the world's known species, with concerted efforts underway to expand the representativeness of certain taxa including plants, fungi and invertebrates, as well as provide an increased focus on marine and freshwater realms. To help guide this work, IUCN Red List Partners have agreed a four-yearly strategy and work-plan, which includes proposals to completely assess, among others, the world's reptiles and fishes, freshwater molluscs, dragonflies, all gingers and relatives, aloes, carnivorous plants, proteas, and a representative sample of the world's trees. Furthermore, national species assessments and assessments of particular taxonomic groups (such as many plants and marine species) are required urgently to help determine their status so as to inform the global assessment.

[6] Butchart S, Stattersfield A, Collar N. (2006) Oryx 40: 266–278
[7] Donald PF, Sanderson FJ, Burfield IJ, Bierman SM, Gregory RD, Waliczky Z. (2007) Science 317: 810–813
[8] Hoffmann M, *et al.* (2010) Science 330: 1503–1509
[9] Hoffmann M, Duckworth JW, Holmes K, Mallon DP, Rodrigues ASL and Stuart SN. (2015) Conservation Biology. doi: 10.1111/cobi.12519
[10] http://www.iisd.ca/iucn/congress/2016/html/enbplus39num24e.html
[11] Secretariat of the Convention on Biological Diversity (2014) Global Biodiversity Outlook 4. Montréal, 155 pages
[12] UNEP-WCMC and IUCN (2016). Protected Planet Report 2016. UNEP-WCMC and IUCN: Cambridge UK and Gland, Switzerland

Figure 1. Categories and criteria of The IUCN Red List



The global IUCN Red List itself can supplement national assessments to assist national decision making processes, and enhance the throughput of the species assessment process. Indeed, IUCN Members recently adopted a motion at the World Conservation Congress in Hawai'i, USA, which "*URGES IUCN Members, especially government agencies, reporting national progress against SDGs, Aichi Targets etc. to include, as appropriate, in national reports and NBSAPs data from the IUCN Red List and national Red List Indices based on disaggregation of these global data as a complement to those derived from National Red Lists where they exist*".

b. National Red Lists

Parties can determine which species are threatened with extinction at the national level by consulting an existing National Red List (NRLs). NRLs provide baseline information about the status and trends (when reassessments are made) of species threat status within their national boundaries.

The strength of the global Red List is its comprehensive coverage of some taxonomic groups, and the consistency of the assessments between countries, regions, ecosystems and taxonomic groups. However, it is not always possible to integrate the information from global species assessments contained in The IUCN Red List assessments into national- or regional-level conservation planning and priority-setting – the level at which most conservation policies are implemented. This can be attributed to: differences in language of assessments; differences in assessment scope (national vs global level); use of different information technology systems; use of different threat categories and criteria - resulting in different assessment outcomes and different scales (global level maps are of broader resolution that maps (when used) in national assessments).

In order to address this issue, IUCN has produced guidance to help countries apply The IUCN Red List Categories and Criteria at national and regional scales. The methodology can help to identify species that may not be threatened at a global level but may be highly threatened at a national level (in order to help prioritise species for conservation action), or to identify species for which Parties may have global responsibility (e.g. single country endemics). It also provides information on the threats that each species faces and the priority actions required in order to address these, to improve the status of threatened species, and prevent extinctions.

By applying the IUCN Red List Categories and Criteria methodology at the national level, NRLs can provide a practical means of assessing species status and translating this information into national and/or regional policies to create effective, sustainable conservation solutions, while also allowing for global level analyses of progress towards Aichi Target 12. Thus, wherever possible, IUCN encourages Parties to adopt the IUCN Red List Categories and Criteria for NRL assessments, in order to promote alignment of these efforts, and to encourage global standardisation.

The National Red List database, hosted by the Zoological Society of London indicates that 119 countries have carried out NRLs. Of these, 83 NRLs are current (i.e. assessments were made within the last 10 years); and 58 of which are known to use The IUCN Red List Categories and Criteria. Plants, known to be under-represented in global assessments, are included in 40 of those 58 (69%) NRLS (up-to-date assessments, using IUCN criteria). Fungi and lichens are the least represented in NRLs, contained in just 11 of the 58 NRLs (19%).

The National Red List assessment database holds 188,362 assessments (67% using The IUCN Red List Categories and Criteria) from national-level assessment processes in 76 countries. Of these 76 countries, 68 NRLs apply The IUCN Red List Categories and Criteria (89%), 12 apply a modification of the IUCN Red List Categories and Criteria (16%), and 14 (18%) use other assessment systems. Most of the national-level assessments in the database (117,686 assessments or 63%) have been carried out within the last 10 years (so are considered up-to-date).

A summary of NRLs (those conducted within the last 10 years) is set out in Annex 2. More information on NRLs is currently being added to the database to provide a more complete picture of National Red Listing efforts worldwide. Considerable progress is being made to ensure that NRL assessments are in accordance with the IUCN Red List Categories and Criteria, meet the Required Documentation Standards, and involve relevant Red List Authorities. These assessments may be more efficiently incorporated into the global IUCN Red List and allow for improved access to both datasets.

c. Global and National Level Indicators of Progress Towards Aichi Target 12

The IUCN Red List Index (RLI) measures overall trends in extinction risk for sets of species, based on genuine changes in their status over time. For a number of species groups, all species have been assessed multiple times (birds, mammals, amphibians, corals and cycads), allowing the calculation of the Red List Index as an indicator measuring the aggregate change in survival probability across the entire species group. Data for other species groups will soon be available. A sampled approach to the Red List Index is used for large taxonomic groups; for example the Sampled Red List Index for Plants is prepared by the Royal Botanic Gardens, Kew. The Red List Index is calculated based on genuine changes in the number of species in each category of extinction risk on The IUCN Red List.

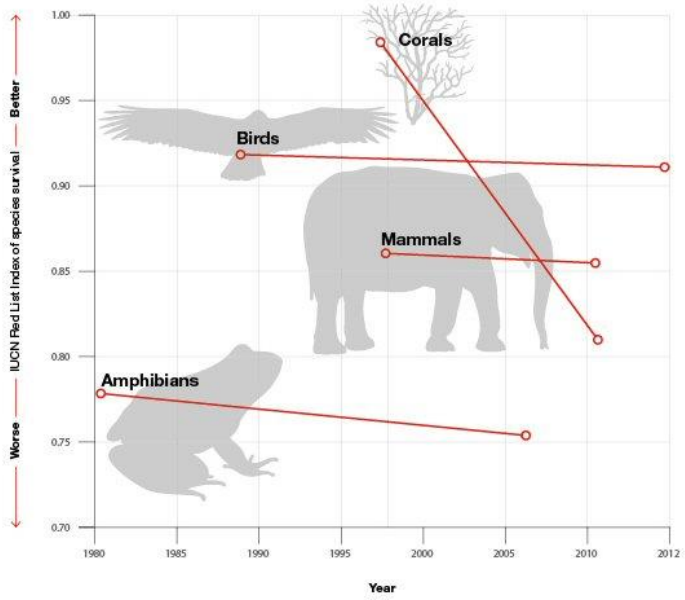
The Red List Index is included in the indicative list of indicators for the Strategic Plan for Biodiversity, is used as an indicator for Targets 15.5, 15.7 and 15.8 in measuring progress towards the SDGs, and has been recommended as an indicator for tracking progress towards the strategic goals of the Ramsar Convention and the Convention on Migratory Species.

While National Red Lists based on assessments of extinction risk at the national scale may provide sensitive measures of status within a particular country, National Red List indices based on repeated National Red Lists may show trends driven by changes in the status of species within the country that are of lesser global significance (because they have very large global ranges). In the context of the Aichi Targets and SDGs, such National Red List indices may therefore be misleading (for example, in an extreme case reflecting local improvements in the status of abundant widespread species while masking extinctions of species found nowhere else outside the country).

To address this, National Red List Indices are now available for each country based on disaggregation of the global index, but weighting each species by the proportion of its global distribution within the

country. These show how adequately species are conserved or not in the country relative to its potential contribution to global species conservation[13]. A further advantage of this approach is that it reflects trends over two decades for five taxonomic groups: no countries have repeated National Red Lists spanning such duration and taxonomic breadth. Hence, such national RLIs are available to all Parties, to track progress towards Target 12. Annually updated indices for each country are available at IBAT country profiles[14] (see below).

Figure 2. The Red List Index for mammals, birds, amphibians and corals.



d. Towards Integration Of National Data Into The Global Picture: Upgrades To The IUCN Red List

The potential for National Red List assessments to be included in the global IUCN Red List is now higher than ever before. Tremendous progress is being made to overcome technological and language barriers, such that if a country has correctly applied the Red List Categories and Criteria, met the required documentation standards and involved the relevant IUCN Red List Authority in the review, there is a high chance those assessments will be able to be directly included on the global Red List. The advances below are specifically intended to improve the integration of national data (global level assessments) into The IUCN Red List and to improve access to data at the national level.

The functionality includes:

- **SIS Connect.**

Recent upgrades to the database used by IUCN for species assessments (development of SIS Connect), allows global assessments of species to be uploaded directly, even where different data management systems are used. The functionality is being trialled with assessments from the South African National Biodiversity Institute (SANBI) and from The Royal Botanic Gardens, Kew.

- **Translations**

In order to improve the throughput of global assessments of species, IUCN has translated an increasing number of The IUCN Red List documents and training materials from English into French and Spanish (IUCN's official languages), and other languages.

[13] http://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf
[14] https://www.ibat-alliance.org/ibat-conservation/login

In addition, IUCN is developing a process to allow for global species assessments to be uploaded to The IUCN Red List in different languages. This will increase the coverage of assessments in the IUCN Red List. Trials include incorporation of global-level species assessments from Brazil (in Portuguese) and assessments in Chinese languages.

- **IUCN Species Mapping**

IUCN now provides a selection of tools and resources to help with mapping of species ranges[15]. The data is now freely available for non-commercial use, to help inform conservation planning and other decision-making processes (commercial users should visit the IBAT site).

e. Access to Relevant Datasets for Informing Actions to Address Target 12

The Integrated Biodiversity Assessment Tool (IBAT) provides decision-makers with access to critical information on: threatened species[16]; important sites for biodiversity (Key Biodiversity Areas[17]); and protected areas[18]. IBAT is developed through a partnership between BirdLife International, Conservation International, the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), and IUCN. IBAT includes a set of web-based decision-support systems that provide access to data for: business[19]; the finance sector; and governments[20].

At the 13th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP13), in Cancún, Mexico, IBAT will launch Country Profiles for countries and territories, delivering nationally relevant data that is disaggregated from global datasets, to support conservation planning and reporting.

The information provided in IBAT Country Profiles may support the NBSAP revision process, for example the development of targets and indicators, and may be useful for national implementation, monitoring and reporting. In addition, it presents the opportunity to harmonize data used by government, business and other relevant stakeholders when conducting spatial planning exercises.

IBAT Country Profiles may be considered a first step in a decision-making context. It does not remove the need for thorough research through detailed on the ground assessments of biodiversity, especially since species-level information on the IUCN Red List of Threatened Species, including species maps, are often of broader resolution than national-level assessments.

IBAT Country Profiles is freely available for non-commercial use by governments, researchers and conservation practitioners, to support decision-making in conservation and development.

4. Preventing extinction and improving the conservation status of species most in decline

a. Understanding IUCN Red List Categories to Inform Conservation Action

After assessment of species' extinction risk, the second element of Aichi target 12 (preventing extinction and improvement of threatened species conservation status) requires a clear understanding and an explicit statement of which species should be the focus of conservation action to achieve this target: those most at risk of extinction and those suffering the biggest declines.

[15] http://www.iucnredlist.org/technical-documents/red-list-training/iucnspatialresources
[16] http://www.iucnredlist.org/#
[17] http://www.keybiodiversityareas.org/home
[18] https://www.protectedplanet.net/
[19] https://www.ibatforbusiness.org/
[20] https://www.ibat-alliance.org/ibat-conservation/login

The IUCN Red List *Threat Categories are* Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). One of the five criteria that are used for assessing the probability of extinction is the rate of decline (either of the population size or of the geographic range) and this can be used to identify the species that are 'most in decline'. This is because different thresholds of decline rate are used to assign species to each of the IUCN threat Categories. Thus, these elements of Target 12 (a. preventing extinction and b. the conservation status of the species most in decline has been improved) can be addressed by targeting those species that are Critically Endangered, and considering those species that are Endangered and Extinct in the Wild (both to avoid extinction and also to improve their status).

b. Overview of Threatened Species

Numbers

There are 3226 (5107) species listed on The IUCN Red List as Critically Endangered, 4807 (7602) as Endangered, 5443 (11,219) Vulnerable species, and 42 (68) that are Extinct in the Wild[21]. This represents the global challenge to halt extinctions and halt and improve the conservation of those with the biggest declines.

The IUCN Red List has five criteria against which species are listed as threatened, namely:

A. Reduction in population size;
B. Geographic range (size and change);
C. Small population size and decline;
D. Very small or restricted population; and
E. Quantitative analysis.

Analysis shows that most countries are home to species that are listed as threatened because of reductions in their population size (Criterion A) or restricted distributions with severe fragmentation, ongoing declines or extreme population fluctuations (Criterion B). These indicate that the actions that will make the biggest contribution towards conserving the most threatened species, and thus meeting Target 12, are those that will stop populations declining and will safeguard their geographic ranges.

CBD Regional-Capacity Building Workshops for Aichi Targets 11 and 12

From 2015 – 2016, the Secretariat to the CBD ran six regional workshops in to assist Parties in their efforts to achieve Aichi Targets 11 and 12.

At these workshops, country representatives provided data on progress at the national level towards each Target, including the number of threatened species, species actions plans, the extent of protected areas, and other data. The data provided by Parties is discussed below, for illustrative purposes only, to show the scale of the task to achieve Target 12 and to identify where and how national level action can focused, so that it is efficient and effective.

c. Need for National Level Action

Whilst Target 12 is reported on at a global level (notably through the Red List Index[22]), the action needed to achieve this Target is implemented by Parties at the national level. Therefore, country-specific decision-making is required to achieve Target 12. This paper acknowledges that this has two consequences. First, Parties have a wide range of international biodiversity targets to meet, amongst

[21] Assessments that are 10 years old or less as at 17 October 2016 (www.iucnredlist.org). Numbers in parentheses are the number of species in each category since the first assessments were made in 1995 and including, therefore, species that are beyond the recommended 10 year life-span of a Red List assessment.
[22] See http://www.bipindicators.net/rli/2010, accessed on 17 October 2016.

both the other Aichi Targets, targets for other conventions and, now the UN Sustainable Development Goals. It will, therefore, be especially helpful to develop a strategic approach to achieve Target 12 nationally. Second, countries with endemic species that are threatened (especially those that are Critically Endangered and Endangered) are faced with a responsibility to conserve these species, and hence special attention is required for endemic species to ensure that their conservation needs are met.

Data from the CBD-led Regional Capacity Building Workshops for Aichi Targets 11 and 12 indicates that most countries report fewer than 500 threatened species (Figure 3a) and many countries report between 50 and 150 threatened species (Figure 3b). Twenty countries, however, contain more than 500 threatened species and eight countries more than 1000 (see Figure 3a). Many of these countries are home to the most Critically Endangered species, and Critically Endangered native species; these species are hugely significant in terms of global achievement of Aichi Target 12.

d. Progress

Progress towards Target 12 has been indicated lately in information provided by the Executive Secretary[23], in which approaches to conserving species are discussed and explanations for improvements in species' status are provided by Parties, derived from 'success stories' for 134 species. Parties attribute improved conservation status of species due to actions such as: conservation of habitats (36 species); reductions of specific threats (e.g. hunting and invasive alien species) for 30 species; and, in 31 cases, implementation of species-specific plans.

The CBD-led Regional Capacity Building Workshops for the Implementation of Targets 11 and 12 have since generated further information on numbers of species-specific action plans that have been prepared by Parties. The information provided by Parties only refers to the existence of species conservation plans and do not detail their contents. Of 115 Parties for which there are informal reports of progress towards Target 12 (Parties involved in the CBD workshops, i.e. excluding EU Member States), 34 countries did not list any species action plans, 52 reported between 1 and 5 species action plans, 9 Parties reported between 6 and 10, and 6 listed more than 10 species action plans: Indonesia (15), Brazil (17), India (19), Madagascar (19), Mexico (40) and Japan (49).

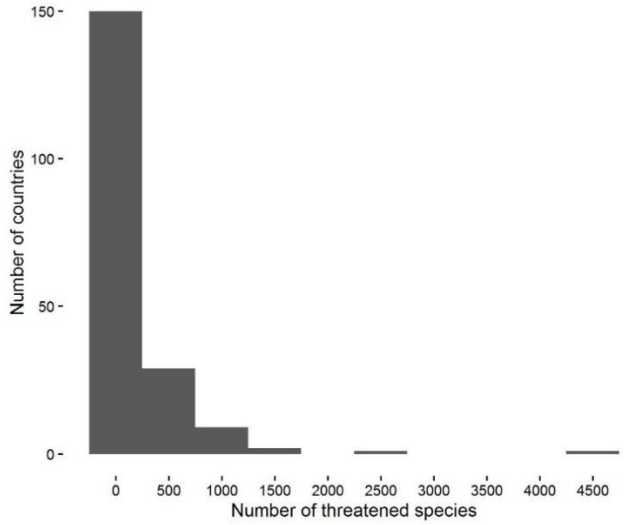


Figure 3a. Total number of threatened species by country: all countries

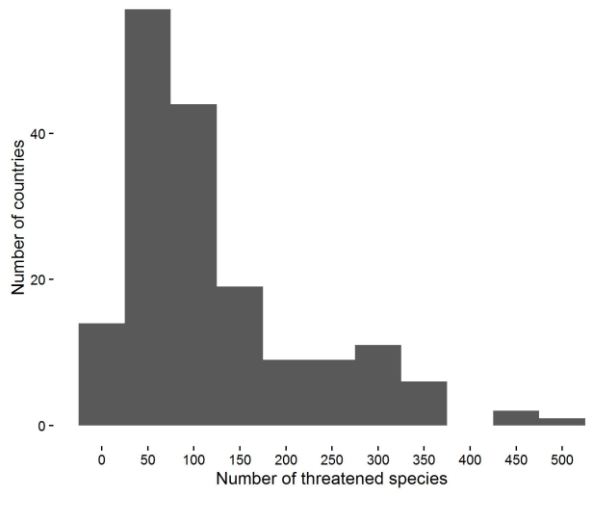


Figure 3b. Total number of threatened species by country: those with fewer than 500 threatened species (from the left hand column of Figure 2a)

[23] UNEP/CBD/SBSTTA/20/INF/44

5. A Strategic Approach to Achieving Target 12

Here we introduce a potential strategic approach that may be used by Parties, to help identify how to improve the conservation status of species.

IUCN's Species Survival Commission (SSC) has developed a strategic approach to developing conservation strategies for single species or groups of species[24]. This process is directly relevant to achieving Target 12 and provides a strategic framework for conservation action in preventing species extinction at global and national levels. It is designed to link a long-term vision (e.g. relating to the threat status of species through attainment of Target 12) to detailed action on the ground through a logical structure that is based on accepted strategic planning principles. The approach is designed to be flexible in order to encompass the very wide range of possible species planning scenarios and it is increasingly well tested in a range of contexts. The main components of a well-developed strategy are: Status Review, Problem Analysis, Vision and Goals, Objectives and Actions. Most of these have clear parallels to national action towards Target 12 and can draw on existing conservation tools.

In detail and summarised in Table 1:

The ***Status Review*** summarises available information on the species that are relevant, such as status, population size and trend, supported by distribution maps where appropriate.

The ***Vision*** is a statement of the ideal future status of species. In the context of Target 12, this may relate to the threat status of species most at risk of extinction in a given country.

The associated ***Goal (or Goals)*** specifies what needs to be achieved to reach the Vision. Considering Target 12, appropriate Goals may involve measureable progress on Critically Endangered, Endangered and/or endemic species, and/or a specified improvement in the National Red List Index.

A key part of the process is a ***Problem Analysis***, which addresses the difficulties in achieving the Goals. This stage considers the main threats to the species, where they occur, their impacts and relative importance. It also considers the constraints that exist and which are believed to make conservation difficult. It the context of Target 12, this may involve analysis of the criteria by which species are listed (range decline, population reduction etc.) and the processes that are driving the extinction of species. Constraints may include the diversity of conservation measures needed to address all species in a country, and the wide range of Parties' other biodiversity commitments.

Objectives comprise the set of measures needed to attain the Goal[s] over the stated time-span. Objectives directly address the threats identified during the problem analysis and can be seen as the inverse of the threats and constraints. ***Actions*** specify the on-the-ground activities that are needed to achieve each Objective and operate over a shorter time frame.

Within the context of improving the status of species as envisaged by Target 12, there are a range of conservation approaches and tools that have been developed for particular contexts and to achieve particular purposes. These include the Red List Index, guidelines for various kinds of species-specific management (e.g. translocation, *ex situ* management) as well as work on a range of site-based approaches, such as identifying important places for biodiversity (e.g. Key Biodiversity Areas) and for strengthening management of existing protected areas.

[24] IUCN/Species Survival Commission. 2008a *Strategic Planning for Species Conservation: An Overview*. IUCN SSC, Gland, Switzerland. 22pp. Available at http://cmsdata.iucn.org/downloads/scsoverview_1_12_2008.pdf. and IUCN/SSC. 2008b. *Strategic Planning for Species Conservation: A Handbook*. IUCN SSC, Gland, Switzerland. 104pp. Available at http://cmsdata.iucn.org/downloads/scshandbook_2_12_08_compressed.pdf (Downloaded on 18 October 2016).

These approaches and others, offer considerable potential to support decision-making in pursuit of Target 12. They may be used to provide options at different stages of this strategic planning process.

Table 1: Summary of Species Conservation Guidance in relation to Target 12

Strategy Component	Step	Potential conservation tool for Target 12 implementation	In the context of Target 12
Status review	1: Where are we? What do we have? What do we lack?	Red List of species in country	The list of known globally threatened species that occur in each country (IUCN Red List)
Vision Goals	2. Where do we want to go?	National Red List Index	Significant progress towards CBD Target 12. The range of conservation measures benefitting species There is a lack of sufficient effective conservation measures to halt all declines and reduce pressures facing all threatened species
Objectives Actions	3. How do we get there?	Key Biodiversity Areas to conserve highly threatened species that occur at a site Consider measures for non-site-based threats (e.g. hunting) to multiple species Consider species conservation strategies for species with particular needs, such as ex situ management, translocation	Understanding of Target 12 within the context of other species conservation targets and agreements, and wider biodiversity targets and agreements (e.g. protected areas and habitat conservation) that Parties have. Analysis of interlinkages (overlaps and complementarities) between species and site-based tools developed for particular purposes Production of decision-support material that to support national level processes, on how to make the most progress towards Target 12.

6. Conclusions

Analysis and trends of current progress suggests that Target 12 will not be met by 2020, yet with a approach to the assessment of species, effective use of extinction risk data to inform the selection of taxa for conservation action, and a strategic approach to conservation action – progress could be greatly enhanced, as a substantial step towards Target, in the time remaining.

Notably, this paper recommends the following key actions for Parties and highlights resources available to Parties, to assist with Progress:

- Identification of species that are threatened with extinction, by application of the Categories and Criteria of the IUCN Red List at either the national or regional scale;
- Utilisation of The IUCN Red List of Threatened species™ to identify species that are threatened at the global level, for which a large proportion of the species global distribution may be within Parties' national boundaries;
- Complementing global data with National Red List assessments to identify threatened species from taxonomic groups that are not yet comprehensively assessed globally and improved interoperability of IUCN Red List assessments and national datasets;
- Prioritisation of species that are most threatened at the global level for conservation action, notably those that are Critically Endangered, Endangered and Extinct in the Wild; and
- A strategic approach to identifying how to reduce extinction risk and species decline rates, utilising the updated IUCN Species Survival Commission approach to developing conservation strategies for single species or groups of species.

Moreover, this paper draws upon the findings and the approach taken by Parties at the CBD-Led Regional Workshops to enhance the implementation of Aichi Targets 11 and 12. The approach of the workshops was to bring together activities that help to progress both Aichi Targets. As such further recommendations include:

- Identification of sites of importance for biodiversity, using the Global Standard for the Identification of Key Biodiversity Areas[25];
- Prioritise areas for protection of threatened species using the identification of Key Biodiversity Areas and systematic conservation planning, through establishment or expansion of networks of protected areas or other effective area-based conservation measures; and
- Where targeted species-specific actions are needed, develop individual Species Action Plans, and this may involve the tackling the threats identified in species assessments.

Finally, resources are available to Parties to assist with assessment of species' extinction risk, which is a primary step to achieve Aichi Target 12. Examples of existing tools and resources available through IUCN and its partners are shown in Annex 3.

With the available resources and prioritisation of species and sites for conservation action, there is still time to make progress towards this important Aichi Target.

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[25] IUCN (2016) A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition. Gland, Switzerland: IUCN.

Annex 1. Numbers of threatened species by major groups of organisms, The IUCN Red List, 2016.2. Threatened species are those listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU).

	1. Estimated number of described species[26]	2. Number of Species evaluated by 2016	3. Number of threatened[27] species in 2016	4. Species evaluated in 2016, as % of species described (1)	5. Best estimate of % threatened species (number threatened (3) as % of extant data sufficient evaluated species(2))[28]
Vertebrates					
Mammals	5,536	5,536	1,208	100%	26%
Birds	10,424	10,424	1,375	100%	13.45%
Reptiles	10,450	5,154	989	49%	Insufficient coverage
Amphibians	7,538	6,525	2,063	87%	42%
Fishes	33,300	15,284	2,343	46%	Insufficient coverage
Subtotal	67,248	42,923	7,978	64%	
Invertebrates					
Insects	1,000,000	6,095	1,156	0.6%	Insufficient coverage
Molluscs	85,000	7,251	1,967	9%	Insufficient coverage
Crustaceans	47,000	3,169	729	7%	Insufficient coverage
Corals	2,175	862	237	40%	Insufficient coverage
Arachnids	102,248	212	166	0.21%	Insufficient coverage
Other taxa	68,827	495	83	N/A	Insufficient coverage
Subtotal	1,305,250	18,084	4,338	1%	
Plants[29]					
Mosses	16,236	102	76	0.6%	Insufficient coverage
Ferns and Allies	12,000	416	217	3%	Insufficient coverage
Gymnosperms	1,052	1,011	400	96%	40%
Flowering Plants	268,000	20,298	10,875	8%	Insufficient coverage
Green Algae	6,050	13	0	0.2%	Insufficient coverage
Red Algae	7,104	58	9	0.8%	Insufficient coverage
Subtotal	310,442	21,898	11,577	7%	
Fungi and Protists					
Lichens	17,000	9	7	0.05%	Insufficient coverage
Mushrooms	31,496	25	22	0.079%	Insufficient coverage
Brown Algae	3,784	15	6	0.4%	Insufficient coverage
Subtotal	52,280	49	35	0.09%	
TOTAL	**1,735,220 8**	**82,954**	**23,928**	**5%**	

[26] The sources used for the numbers of described species in each taxonomic group can be found here: http://cmsdocs.s3.amazonaws.com/summarystats/2016-2_Summary_Stats_Page_Documents/2016_2_RL_Stats_Table_1.pdf

[27] Threatened species are those listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU).

[28] Where <80% of species within a group have been evaluated, figures for % threatened species are not provided because there is insufficient coverage for these groups. It is only possible to provide reliable figures for % threatened species for those groups that are completely or almost completely evaluated.

[29] The plant numbers DO NOT include species from the 1997 IUCN Red List of Threatened Plants (Walter and Gillett 1998). Those plants were assessed using pre-1994 IUCN system of threat categorization. Hence numbers of threatened plants are much lower when compared to the 1997 results. The results from this summary and the 1997 Plants Red List should be combined when reporting on threatened plants.

Annex 2: Taxonomic coverage of National Red Lists carried out since 2006 by assessment system

	Criteria system			
Taxon group	**IUCN**	**Modified IUCN**	**Non-IUCN**	**TOTAL**
Vertebrates	12,294	1,304	587	14,185
Mammals	2,132	206	65	2,403
Birds	4,106	345	373	4,824
Amphibians	1,691	82	45	1,818
Reptiles	1,673	125	101	1,899
Fish	2,691	546		3,237
Invertebrates	21,615	5,858	28	27,481
Insects	14,394	3,380	15	17,789
Arachnids	1,770	238	1	2,009
Crustaceans	1,318	159	1	1,478
Centipedes & millipedes	146	25		171
Other arthropods	112	2		114
Molluscs	3,434	1,961	10	5,405
Other inverts	429	73	1	503
Plants	41,076	10,906	10,242	62,224
Flowering plants	34,707	8,241	8,961	51,909
Gymnosperms	410	13	72	495
Mosses	3,012	1,364	679	5,055
Ferns & allies	1,901	959	526	3,386
Green algae	954	172		1,126
Red algae	87	144		231
Fungi and others	9,703	820	3,455	13,978
Mushrooms	566		449	1,015
Lichens	1,867		1,194	3,061
Brown algae	67	30		97

Annex 3: Existing tools and resources to assist Parties with the red listing process

Description	Resource
Guidance Documents and Training Materials for IUCN Red List Assessments and Network Support	
IUCN Red List Categories and Criteria. Version 3.1.	Available in English, Français, Español; Arabic, Chinese, German, Italian, Japanese, Korean, Mongolian, Portuguese, Russian, Swedish, Turkish.
Guidelines for Using the IUCN Red List Categories and Criteria (version 12).	Available in English.
Guidelines for Appropriate Uses of Red List Data (version 3).	Available in English.
Documentation Standards and Consistency Checks for IUCN Red List Assessments and Species Accounts (version 2).	Available in English.
Classification Schemes Guidance Documents *provides a set of draft standard terms (called Classification Scheme to document taxa on The IUCN Red List. The Classification Schemes used in the Red List assessments include:* • *Habitats;* • *Threats;* • *Stresses (the threats that impact a taxon);* • *Conservation Actions In Place;* • *Conservation Actions Needed;* • *Research Needed (further research needed on a taxon);* • *Use and Trade – a new version of this classification scheme will be available soon);* • *Plant Growth Forms (growth or life form to enable searches on the Red List for functional groups of plants);* • *Ecosystem Services; and* • *Livelihoods – the importance of the species assessed to human livelihoods)*	IUCN Red List Classification Schemes web page.
Online training in the use of the IUCN Red List methodology in English, French and Spanish: • *Provides training on the application of the IUCN Red List Categories and Criteria* • *Also helps to aid the comparison of national red lists, or to compare national lists with the global IUCN Red List.*	https://www.conservationtraining.org/mod/page/view.php?id=3756&lang=en
IUCN Red List Assessor Training workshops use a mix of short presentations and practical sessions to provide an interactive environment in which to learn how to prepare Red List assessments for publication on the IUCN Red List and on regional and national Red Lists.	Click **here** for more information and access to Red List Assessor training presentations.
IUCN Species Survival Commission (SSC) and its constituent Specialist Groups *can provide information to enhance the conservation of specific taxa, as well as provide information for conservation action planning, advice on development of NBSAPs, and policy advice.*	https://www.iucn.org/theme/species/about/ssc-specialist-groups-and-red-list-authorities-directory
The IUCN Red List Partnership: *The IUCN Red List is supported by: Arizona State University, BirdLife International, Botanical Gardens Conservation International (BGCI), Conservation International (CI), IUCN (in particular the Global Species Programme and the Species Survival Commission), NatureServe, Royal Botanic Gardens Kew, Sapienza University of Rome, Texas A&M University, and Zoological Society of London.*	http://www.iucnredlist.org/about/overview#red_list_partnership A brief summary of the work done by each Red List Partner can be found here, but more detailed information is available from each of the Partners websites.
Guidance Documents and Networks for National and Regional Red List Assessments	
Guidelines for Application of IUCN Red List Criteria at Regional and National Levels. Version 4.0 provides *a standardized methodology to make valid comparison between national and red lists and with the global IUCN Red List.*	Available in English, Français, Español, Arabic
Guidance on the national red list process: *to help establish a national red list where none exists, or enhance an existing national red list*	http://www.nationalredlist.org/support-information/the-process/
IUCN National Red List Working Group (also known as the IUCN Red List Alliance) *maintains a centralised, searchable database that contains local, national and regional red lists from around the world and links to training materials.*	http://www.nationalredlist.org/
Red List Assessment Tools	
Red List Index: *provides a template for calculating a Red List Index.*	Available in English. (MS Excel file)
Guidelines for Calculating and Using a Red List Index.	See Red List Index here: Publications

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