Convention on Biological Diversity's Global Biodiversity Outlook 4

EXTRACT

Target 18: Traditional knowledge respected

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Preface

Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world, usually associated with the natural environment. Developed from experience gained over time and adapted to the local culture and environment, traditional knowledge is passed from generation to generation. It tends to be collectively owned and may take the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, techniques and innovations. The practical applications of traditional knowledge reflect the complex worldviews and social systems of particular Indigenous and local community cultures. Traditional knowledge is often of a practical nature, particularly in such fields as agriculture including forestry, water management, animal husbandry, fisheries, gathering, hunting and trapping, health, and environmental management in general.

Aichi Biodiversity Target 18 is regarded as both a cross-cutting issue and as an essential element of the "enabling" cluster, which will assist achieving all other Targets. Indigenous and local communities are therefore recognized as key partners in the implementation of the Convention, the Strategic Plan for Biodiversity 2011-2020 and in planning and revision processes such as the development of national biodiversity strategies and action plans and their implementation. By encouraging the effective participation of the indigenous and local communities in its work, the Convention promotes and facilitates the use of traditional knowledge and customary sustainable use for the goals of the Convention.

1. Are we on track to achieve the 2020 target?
1.a. Status and trends

Target 18 is extremely complex to measure and information is variable across countries and communities and frequently not easily accessible. To assess status and trends globally the following headline indicators have therefore been agreed as proxies: [1]

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[1] Decision XI/3 (http://www.cbd.int/decision/cop/default.shtml?id=13164)

Trends of linguistic diversity and numbers of speakers of indigenous languages;
Trends in land-use change and land tenure in the traditional territories of indigenous and local communities;
Trends in the practice of traditional occupations;
Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan.

A dataset is being advanced to determine trends over time only for the first of these headline indicators, that on linguistic diversity. Even for linguistic diversity, however, considerable uncertainty remains, primarily due to a lack of reliable data that is geographically and chronologically comparable. Advancing information and data on the indicators of traditional occupations and land change and tenure is under discussion with relevant international organizations including the International Labor Organization, the Office of the High Commissioner for Human Rights and the International Land Coalition, the United Nations Permanent Forum on Indigenous Issues, and the Working Group on Indicators of the International Indigenous Forum on Biodiversity, who are also considering these indicators under the framework of the implementation of the United Nations Declaration on the Rights of Indigenous Peoples. The fourth indicator regarding the integration of traditional knowledge and participation of indigenous and local communities will be considered in the analysis of the fifth and future national reports.

Language Indicator

Trends of linguistic diversity and numbers of speakers of indigenous languages is a useful proxy indicator for measuring trends in traditional knowledge for two main reasons. Firstly, local and indigenous languages are a primary vehicle for the transfer of traditional knowledge (Larsen, Turner, and Brooks 2012). Just as one's native tongue is learned from parents, grandparents, and other elder family and community members, so too are the spirituality and cultural traditions, technical skills, and environmental expertise that traditional knowledge encompasses. Many of these traditions, technical skills and expertise are embedded in particular languages in ways that are not easily translatable. Secondly, general social changes that affect indigenous peoples and local communities around the world threaten both the diverse languages of the world and the wealth of ecological knowledge accumulated over centuries and millennia. For example, young Piaroa of Venezuela having greater competency in Spanish were shown to lack skills in identifying and naming traditionally important plant species (Zent 2001). Like language loss, traditional knowledge loss is related to complex socio-cultural, demographic and economic changes which affect knowledge (and language) transmission in complex and unpredictable ways. While the two phenomena of language loss and traditional knowledge loss are not always perfectly correlated, the loss of speakers of a language is generally suggestive of changes in the social dynamics that underpin traditional knowledge transmission.

Language erosion and loss can ultimately stem from a wide range of factors related directly to the environment and biodiversity, including catastrophic events, such as floods, droughts,

disease or earthquakes, that may decimate communities or the gradual erosion of speakers over generations, due to loss of access to traditional territories and resources, displacement and migration, including urbanization, and partial or whole replacement with other languages. Language shift, from an indigenous to widespread languages such as English or Chinese is probably to most serious form of language loss experienced by indigenous and local communities. These challenges are increased by the fact that many indigenous or traditional languages are spoken by small numbers of speakers. The decline of smaller languages and traditional occupations may also be explained in part as a consequence of the enlarged social milieu, education (in the dominant language) and economic development that may be chosen by indigenous and local communities searching for the overall improvements of their well-being in a rapidly changing world. In these circumstances traditional knowledge may change as communities incorporate new information and as they respond to a new range of problems. Furthermore, traditional knowledge need not be expressed solely in traditional languages as traditional languages are dynamic over generations and many concepts survive translation and useful concepts captured in traditional languages can be incorporated in dominant languages or even into newly developing languages such as creoles.

Despite persistent gaps in the quality and completeness of data, three different analyses offer useful insights into the current trends of linguistic diversity and numbers of speakers of indigenous languages.

UNESCO's *Atlas of the World's Languages in Danger* (Moseley 2010), represents a snapshot view of almost 2500 endangered languages, based on an analysis of the degree of intergenerational transmission at the time of data collection. Based on this analysis approximately 40% of languages spoken in the world are vulnerable or endangered (Figure 18.1). Nonetheless, the data collected in the *Atlas* was not designed to measure trends, making it difficult to extrapolate how many of these languages may become extinct within a given period of time.
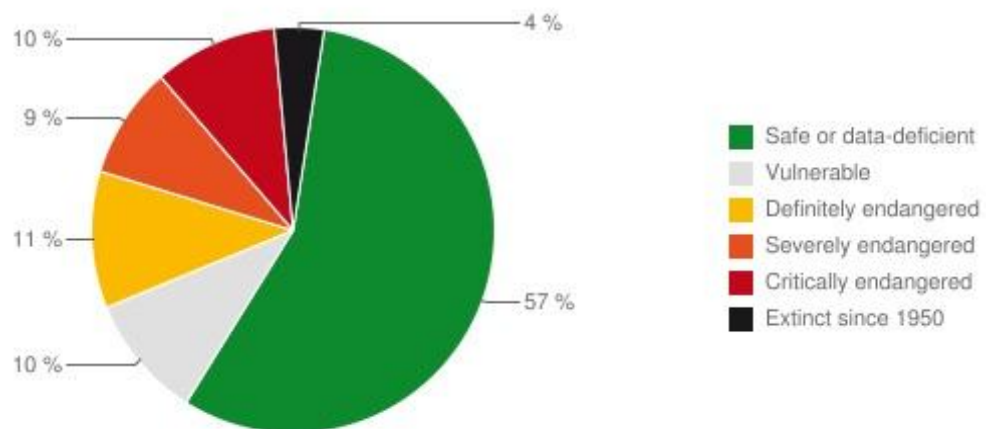
Figure 18.1. Breakdown of language threat level in UNESCO's *Atlas of World Languages in Danger* (UNESCO *nd*)[2]. Approximately 40% of languages are vulnerable or endangered, based on the degree of transmission between generations, at the time of data collection (Moseley 2010).

Until recently, there has been no resource for providing longitudinal language data. Like UNESCO's *Atlas, the Ethnologue* provides no longitudinal information and it is common for population figures to be carried over unchanged from one edition to the next, even for seriously endangered languages with few speakers (Hammarström 2005; Paolillo and Das 2006). In this respect, UNESCO's language database (Minasyan 2013) is unique. This database currently contains data on over 3000 languages in 123 countries, as well as other information about the sources of the data, how it was gathered, etc. The data were gathered from two primary source types: government censuses and non-governmental studies (including academic publications). While the dataset is not complete, it is more comprehensive than any alternative source, and it was gathered with the intention of informing on trends of language population growth or shrinkage, which can in turn provide information on language endangerment.

Analysing trends for 1003 languages with at least two data points, it was found that approximately 38% of languages are shrinking (Figure 18.2) (Paolillo *in preparation*). It is worth noting that number of speakers has a significant influence on the growth trend of languages: larger languages tend to grow, while smaller ones tend to shrink. This finding leads to two important conclusions. Firstly, smaller languages are imperiled. Secondly, there is a critical size or "tipping point" below which a language is likely to lose speakers. The current data support only a broad estimate of this tipping point, which is centred on 8,239 speakers with a 95% certainty ranging between 2058 and 54,923 speakers. The wide range of this figure is likely to be due to the lack of accurate data, even in the UNESCO database, and the complex dynamics which determine language loss or gain.

(insert Figure 18.2 here)

Figure 18.2. Proportion of languages growing and shrinking during the past 60 years according to the UNESCO language database (Paolillo *in preparation*).

A number of studies have shown that half of languages are spoken by fewer than 10,000 people (Grimes 1986, Paolillo and Das 2006, Minasyan 2013), roughly corroborating the findings of the UNESCO *Atlas* (Figure 18.1). Given the broad tipping point estimate, the finding that 38% of languages sampled in the UNESCO database are currently losing speakers generally supports this finding. However, these figures only take into account whether languages are gaining or losing speakers, not the speed at which this change is occurring. If trends for the 1003 languages for which longitudinal data is held in the database are

extrapolated into the future, approximately 15% of languages are predicted to be extinct by 2100 (Figure 18.3).

(insert Figure 18.3 here)

Figure 18.3. Extrapolated proportion of languages which will be extinct at four future dates if current trends continue unchanged (Paolillo *in preparation*).

Although providing the best estimate currently available, Figure 18.3 must be interpreted with caution. For many languages, only two data points are available, hence there is considerable uncertainty around these estimates. In addition, some of the estimates are clearly unrealistic; for example, a few small languages are projected to grow from the hundreds to the millions by 2100. This may reflect the relative paucity of information about smaller languages, changes in the counting of some languages, the early success of certain known revitalization efforts, or other factors. Finally, the sampling of languages in the database is still incomplete, with certain regions, notably Africa, being poorly represented. Taking all of these issues into account, the information in the database can be regarded as representing an optimistic view of language vitality and endangerment. It is likely that additional data would change this picture.

To summarise, several key conclusions may be drawn from UNESCO's *Atlas of the World's Languages in Danger* (Moseley 2010) and an analysis of UNESCO's language database (Paolillo *in preparation*). Firstly, best evidence suggests that 35-50% of languages are vulnerable or endangered, with at least 15%, if not many more, facing extinction by the end of the century. There is a tipping point of roughly 8-10,000 speakers below which languages should be considered particularly vulnerable, and should be prioritized for urgent support and revitalization. However, languages with more than 10,000 speakers may be shrinking, too, depending on the socio-cultural and economic context of each language. Language dynamics are complex and small shifts in the social, cultural, economic, environmental or demographic context can have marked impacts on a language's vitality. This is particularly true of those languages with few speakers, for which changes can have particularly dramatic impacts either for the worse or, where language revitalization programmes are successful, for the better.

The Index of Linguistic Diversity, which has been developed by the non-governmental organization Terralingua using Ethnologue data. As described above, the *Ethnologue* data has some limitations as regards its applicability to a longitudinal study, but it provides some indication of what may be happening with smaller languages, especially in regions where national census data is absent or irregular, particularly Africa.

According to the Index of Linguistic Diversity, one-fifth of the world's linguistic diversity has been lost since 1970 as the human population shifts from speaking less-populous mother tongues to dominant languages (Harmon and Loh 2010). The Index of Linguistic Diversity (ILD)[3] is a metric that conveys the changes in the relative distribution of mother-tongue speakers, though it does not take into account multilingualism which is the norm rather than the exception (Tucker 1999). Of the approximate 7,000 languages on Earth, 1,500 were randomly selected from the 2005 15th edition of *Ethnologue* [4]for use in the ILD. An unchanged index value indicates that, within the language group being indexed, each language has maintained hypothetical stability over time, that is, its proportional share of all mother-tongue speakers has not changed.[5] A drop in ILD indicates a decline in the evenness of distribution of mother-tongue speakers among languages. The Global ILD declined 20% between 1970 and 2005 (see Figure 18.2), and Global Indigenous ILD declined 21% during the same period (see Figure 18.3). As Harmon and Loh (2010) estimate that 80-85% of all languages are indigenous (as defined by ILO Convention 169), it is not surprising that ILD Global and ILD Global Indigenous show similar trends.
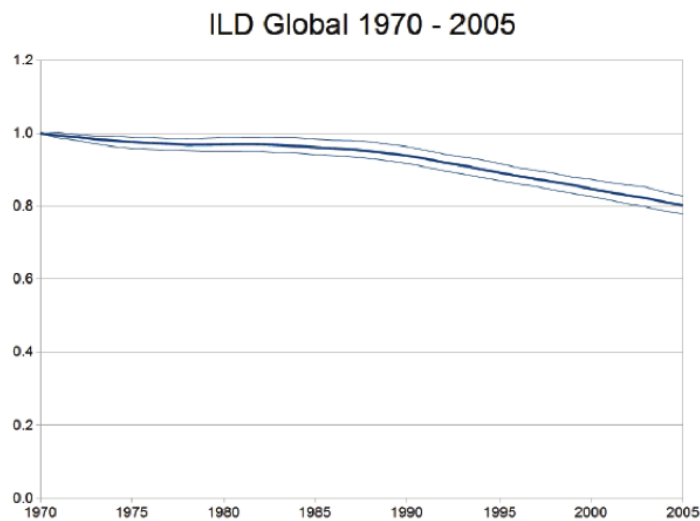

Figure 18.4. Global Index of Linguistic Diversity (1970-2005). The ILD measures loss of speakers of minority languages and mother tongues over time. At the global scale, linguistic diversity has been in decline since at least 1970, and most markedly since the mid 1980s. Upper and lower confidence limits, showing the boundary of the 95% confidence interval, are shown as thin lines above and below the main trend line in Figures 2 and 3 (Harmon and Loh 2010).

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[3] The methodology for and first iteration of the Index of Linguistic Diversity were developed in 2006-2010 as a Terralingua project (www.terralingua.org/linguisticdiversity).

[4] http://www.ethnologue.com/

[5] Some scholars point out that a language may be gaining speakers, but if it is not gaining as many speakers as English, for example, it is considered to be in decline.

Land Indicator

Dispossession of traditional territories and natural resources continues to be a major problem confronting indigenous and local communities. Secure rights to land, territories and resources, including access, control and management of those resources, represent a fundamental requirement to enable communities to maintain and practise their customary use and traditional knowledge in their daily interaction with the biodiversity around them. Customary use and practices cannot be disconnected from the natural resources in traditional lands and territories. If communities do not have secure land and resource rights, this is a threat to their customary use systems[6] and traditional knowledge.

The global pace of commercial land acquisitions has increased dramatically since 2005, peaking in 2009 probably due to a spike in farmland purchasing following the 2007-08 food price crisis (see Figure 18.5) (Anseeuw et al. 2012). Africa is the region most targeted by the "land rush" since 2000. While there is yet no systematized metric for assessing the global status and trends in land-use change and land tenure relevant to indigenous and local communities, in most countries, land dispossession and other factors have displaced an estimated 50% at least of indigenous and local communities to urban areas (UN-Habitat 2011). Furthermore, an abundance of representative and indicative case studies reveals that traditional territories remain insufficiently protected from and broadly vulnerable to the high commercial demand for land. The local impacts of land grabbing schemes consistently depreciate food, water, housing, and livelihood security, especially in the short and medium terms (Anseeuw et al. 2012).
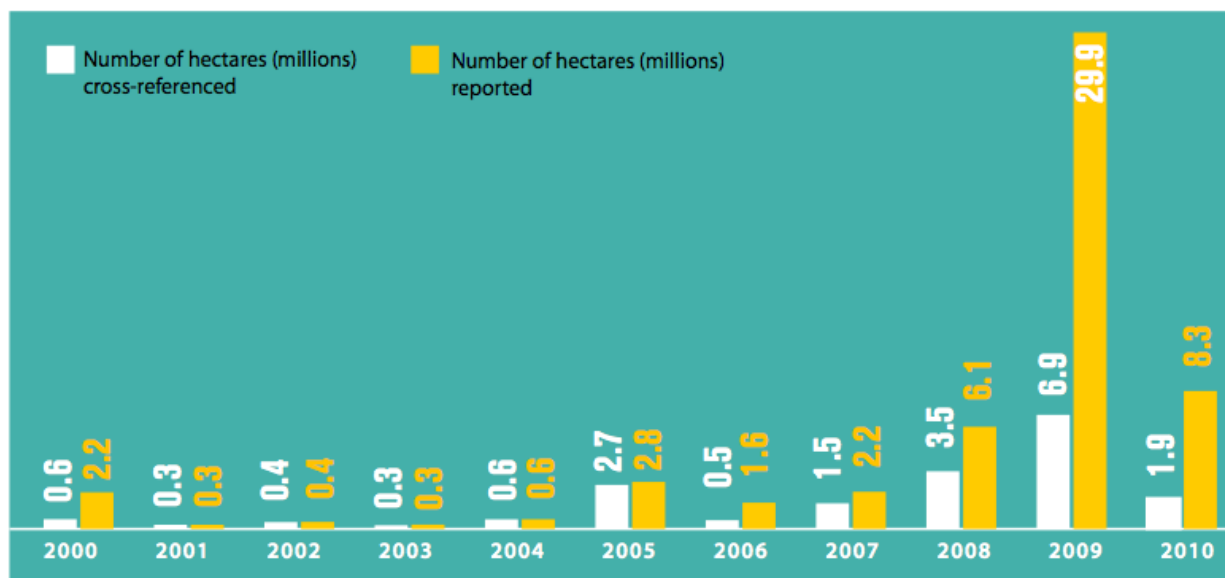
Source: Land Matrix

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[6] Refer Alexandre Corriveau-Bourque at
http://www.rightsandresources.org/publication_details.php?publicationID=6587

Figure 18.7. The global pace of land acquisitions. The year 2009 marked a dramatic spike in land grabbing, but otherwise, the reported area of land acquired every year has increased on average since 2000 (Anseeuw et al. 2012).

Indigenous and local communities dispossessed of their traditional territories may or may not be evicted from their land (Anseeuw et al. 2012). However, in every scenario of land tenure dispossession, including privatisation, indigenous and local users face a reduction in the amount or quality of resources that they may reap from their own territories. The loss of access to land is especially detrimental to the subsistence of pastoralists and people dependent on forest resources. Because they rely on very large, necessarily communal tracts of lands, they are extremely vulnerable to land seizure, development, and partitioning. Where traditional territories are seized from indigenous and local communities, compensation (if awarded at all) is often inadequate. Financial payments cannot compensate for the cultural losses experienced by disenfranchised indigenous and local communities, infrastructure and services provided especially to remote communities is generally of poor quality, and the potential for job provision during- and post-development is generally exaggerated. Jobs that are provided are often low-paid and temporary (Anseeuw et al. 2012). Intergenerational transfer of territories and resources is disrupted.

Unequal land rights, systematic discrimination, income disparities, and the profusion of sexual and domestic violence disproportionately expose women to the detrimental impacts of land tenure loss (Anseeuw et al. 2012).

Traditional Occupations Indicator

The practice of traditional occupations is a tangible component of the knowledge, innovations and practices of indigenous and local communities, theoretically making it relatively easy to assess. Common examples of traditional occupations include hunting, gathering, trapping, fishing, herding and grazing, shifting cultivation, weaving and carving. By preliminary definition, effective performance in a traditional occupation depends on the worker having knowledge of the traditional culture and practices (CBD 2009). Beyond that aspect, the definition of a traditional occupation needs refining. Because many activities, tasks, and occupations within indigenous and local communities are distributed according gender, a full account of the status and trends in the practice of traditional occupations would not be complete without considering the differing roles of women and men (Ballard 2012).

As women are often the backbone of the indigenous community and usually responsible for raising children, the burden of meeting the immediate needs of the family in times of hardship tends to rest on them (Ballard 2012). Thus, the loss of traditional livelihoods and the resulting need to seek supplementary income disproportionately exposes women to poverty and exploitation. In some cases this may mean that women must forego traditional activities in order to earn income, thereby leading to an erosion of traditional knowledge (Heckler 2002), while in other cases, it may lead to an increased dependence upon traditional livelihoods. For example, when faced with economic hardships, single mothers in the Anishanabek community of Manitoba, Canada, rely more heavily on traditional

activities, such as collecting berries and traditional medicines, reciprocal child-minding duties, or hunting and preparing game (Ballard 2012).

In conclusion, with political will and adequate financial support, the Working Group on Article 8(j) is likely to complete the development and adoption of several sets of guidelines, standards and tools by 2020 (see also section 2.a.), useful for the effective implementation of article 8(j)[7] and related provisions. However, on the basis of trends outlined above there is a risk that Target 18 may not be achieved until the products of the Working Group are adopted and effectively implemented at the national and local level, with the effective participation of indigenous and local communities.

Integration and Participation Indicator

Further assessment of what is needed to achieve Target 18 needs to be more deeply consider where progress is being made in terms of the various indicators, including the fourth indicator "Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan", as many of these changes are likely to be the result of policy changes and legal reforms happening at the country level, rather than from guidelines being developed by Working Group 8j of CBD.

Indigenous and Local Community Initiatives in Support of Indicators

Indigenous and local Communities are advancing their own solutions to establishing status and trends in the indicators adopted for traditional knowledge including such initiatives as community based monitoring and information systems. Community-based monitoring and information systems (CBMIS) refers to the bundle of monitoring approaches related to biodiversity, ecosystems, land and waters, and other resources, as well as human well-being, used by indigenous and local communities as tools for their management and documentation of their resources. Community-based monitoring and information systems use an innovative methodology based on both traditional knowledge and new tools such as digital mapping using the latest technology, three-dimensional (3D) maps and printers and the countryside management software (CMS). The methodology is based on traditional knowledge and is particular for each indigenous or local community. CBMIS could provide tools from traditional knowledge and new technology to the communities for their assessment and it is a base for developing planning and decision-making. CBMIS could also contribute at national, regional and global levels through improved local, national and regional information systems. Further to this, the Swedish Resilience Centre is promoting a methodology using a Multiple Evidence Base approach which is compatible with CBMIS and which may also be very useful in arriving at a picture of status and tends in the indicators

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[7] Article 8(j) Each Contracting Party shall, as far as possible and as appropriate subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;

adopted for traditional knowledge. CBMIS and a Multiple Evidence Base approach may assist Parties in drafting of national reports, noting the guidelines for the fifth national reports[8] call for indigenous and local community participation.

1.b. Projecting forward to 2020

The survival of traditional knowledge is at a crossroad. Studies such as the composite report on the status and trends regarding the knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biodiversity [9] have identified the use and transmission of traditional knowledge to be in decline and facing many obstacles to its retention and use in recent history. At the same time there is renewed interest by indigenous and local communities, Parties and governments, as well as the private sector in its retention and use. There are also excellent traditional language restoration and revival programmes in a number of countries. The adoption of the Nagoya Protocol in 2010 is also contributing to both the protection and promotion of traditional knowledge associated with genetic resources.

Parties have shown renewed interest in progressing tools, through the revised programme of work for article 8(j) and related provisions, to fully implement commitments under articles 8(j), 10(c)[10] and related provisions. Parties and governments are also increasingly reporting on related initiatives, both in their national reports and directly to the Working Group on Article 8(j) and Related Provisions.

Today there is a growing appreciation of the value of traditional knowledge. This knowledge is valuable not only to those who depend on it in their daily lives, but to modern industry and agriculture as well, where indigenous and local communities choose to grant access to such knowledge. Many widely used products, such as plant-based medicines, health products and cosmetics, are derived from traditional knowledge. Other valuable products based on traditional knowledge include agricultural and non-timber forest products as well as handicrafts.

The holistic nature of traditional knowledge places an emphasis on complex relationships that maximize and enable adaptive decision-making in local practices while providing

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[8] Refer to decision X/10, paragraph 11.

[9] See UNEP/CBD/WG8J/5/3 http://www.cbd.int/doc/?meeting=WG8J-05; UNEP/CBD/WG8J/AG/2/2/ADD4 http://www.cbd.int/doc/meetings/tk/acpow8j-02/official/acpow8j-02-02-add4-en.doc; UNEP/CBD/WG8J/AG/2/2/ADD5 http://www.cbd.int/doc/meetings/tk/acpow8j-02/official/acpow8j-02-02-add5-en.doc; UNEP/CBD/WG8J/AG/2/2/ADD6 http://www.cbd.int/doc/meetings/tk/acpow8j-02/official/acpow8j-02-02-add6-en.doc

[10] Article 10(c) Each Contracting Party shall, as far as possible and as appropriate: (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

feedback information on both short and long-term ecological and social trends. Traditional knowledge can make a significant contribution to global discussions concerning sustainable development goals and the post 2015 sustainable development agenda. Recognition and protection of customary sustainable use of biodiversity can contribute significantly to poverty alleviation. Many indigenous and local communities are situated in areas of high biological and genetic diversity. Many of them have sustainably managed and used biological diversity for thousands of years. Some of their practices have been proven to enhance and promote biodiversity at the local level and aid in maintaining healthy ecosystems. The contribution of indigenous and local communities to the conservation and sustainable use of biological diversity goes far beyond their role as natural resource managers. Their skills and techniques provide valuable information to the global community and a useful model for biodiversity policies. Furthermore, as on-site communities with extensive knowledge of local environments, indigenous and local communities are most directly involved with conservation and sustainable use and can be the first to notice and raise alarms about the erosion of biodiversity. Because of this traditional knowledge fiinds itself interfacing with science more and more

Despite important advancements at the policy level, for instance the UN Declaration on the Rights of Indigenous Peoples, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, there is no concrete evidence that the erosion of traditional knowledge is slowing. This may be partly related to a lack of quantitative data, however concerns have also been raised about the many barriers to implementation of these instruments and to ensuring that raised appreciation for traditional knowledge improves the situation for indigenous peoples and local communities.

1.c. Country actions and commitments[11]

As evidenced in national reports and through submissions to the Working Group on Article 8(j) and related provisions, Parties increasingly recognize the importance of traditional knowledge and sustainable use (as cross-cutting issues) in reaching the goals of the Convention on the conservation and sustainable use of biodiversity, in light of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets. Traditional knowledge and sciences can be complimentary and mutually beneficial to scientists and communities so long as there is recognition of the particular strengths and limitations of both types of knowledge" (Fraser, Coon, Prince, Dion & Bernatchez, 2006) Synthesizing effective strategies that can

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[11] This assessment is based on an examination of the national biodiversity strategies and action plans from the following countries: Australia, Belarus, Belgium, Colombia, Democratic People's Republic of Korea, Dominican Republic, El Salvador, England, The European Union, Finland, France, Ireland, Japan, Malta, Myanmar, Serbia, Spain, Suriname, Switzerland, Timor Leste, Tuvalu and Venezuela. In addition it considers the set of national targets developed by Brazil. This assessment will be further updated and refined to account for additional NBSAPS and as such these initial findings should be considered as preliminary and were relevant a level of confidence has been associated with the main statements. This assessment focuses on the national targets, objectives, priority actions and similar elements included in the NBSAPs in relation to the international commitments made through the Aichi Biodiversity Targets.

meet mutually defined conservation goals will require improved attitudes of mutual learning from multiple knowledge systems, more effective communication among academic disciplines, deeper analysis of what is working at the community level, and identification of where there are gaps in expertise and application" (Chan, et all, 2007).[12]

Slightly more than half of the national biodiversity strategies and action plans examined contain targets or similar commitments related to traditional knowledge (medium). These national targets are broadly in line with the Aichi Biodiversity Target 18 (medium). The targets generally focus on ensuring that traditional, knowledge innovations and practices are respected (low). By comparison there is less explicit emphasis on the integration of traditional knowledge innovations and practices into the implementation of the Convention or on ensuring the full and effective and participation of indigenous and local communities (low). Two examples counter to this trend are Brazil and Finland which have both established targets which reflect the various elements of the Aichi Biodiversity Target 18.

Some countries, for example Malta and Serbia, have established commitments in their national biodiversity strategies and action plans which relate to local communities. A number of countries, for example Suriname, have also included references to access and benefit sharing in their commitments related to Aichi Biodiversity Target 18.

2. What needs to be done to reach the Aichi target?
To an extent the Parties have identified and prioritized tasks of the revised programme of work for article 8(j) and related provisions, as tools necessary for achieving target 18 by 2020. Their early completion and adoption is therefore desirable in global efforts to achieve target 18. However practical actions such as national action plans supporting community action plans for both traditional knowledge and customary sustainable use may be the best way forward in lieu of the finalized tools.

2.a. Actions

Key actions to accelerate progress towards this target include:

(a)   Developing national guidelines, aligned with relevant guidance under the Convention, on recognizing and safeguarding the rights of indigenous and local communities over their knowledge;

(b)   Promoting local initiatives that support traditional and local knowledge of biodiversity and promote customary sustainable use, including traditional health care

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[12] Chan, K., Pringle, R., Ranganathan, J., Boggs, C., Chan, Y., Ehrlich, P., et al. (2007). When Agendas Collide: Human Welfare and Biological Conservation. *Conservation Biology* , *21* (1), 59-68.

Fraser, D. J., Coon, T., Prince, M. R., Dion, R., & Bernatchez, L. (2006). Integrating traditional and evolutionary knowledge in biodiversity conservation: A population level case study. *Ecology and Society* , *11* (2: 4)

initiatives; strengthening opportunities to learn and speak indigenous languages; research projects and data collection based on traditional methodologies (link to Target 19); and involving local and indigenous communities in creation, control and management of protected areas (link to Target 11);

(c)   Raising awareness of the importance of traditional knowledge to conservation and sustainable use of biodiversity (link to Target 1);

(d)   Supporting and cooperating in the organization of capacity-building activities on relevant issues under the Convention for indigenous and local communities, as well as cultural awareness-raising programmes; and

(e)   Promoting effective participation of indigenous and local communities, at all levels, in issues related to biodiversity and of interest to them.

More specifically, in light of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets, and the adoption of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, the programme of work for Article 8(j) and related provisions (established by decision V/16, annex) was revised by the Parties in decision X/43 with a focus on:

- Task 7, Guidelines for mechanisms to ensure that: indigenous and local communities obtain a fair share of benefits arising from the use and application of their knowledge, innovations and practices; that prior informed consent of the knowledge holders is obtained by entities interested using such knowledge and; that obligations are identified for countries of origin off traditional knowledge, as well as users countries.
- Task 10, Standards and guidelines to report and prevent the unlawful appropriation of traditional knowledge.
- Task 12, Guidelines for national legislation or other mechanisms to implement Article8(j) and related provisions, including sui generis systems, that recognize, safeguard and fully guarantee the rights of indigenous and local communities over their traditional knowledge.
- Task 15, Guidelines that would facilitate repatriation of knowledge and related information to facilitate the recovery of biodiversity related knowledge, innovations and practices.

Parties have committed to completing these tasks in order to finalise tools needed by Governments to achieve Target 18. Parties have also committed to adopting and implementing a Global Plan of Action on Customary Sustainable Use as a major component of work of the revised programme of work for articles 8(j), 10(c) and related provisions.

Underpinning efforts by governments are efforts at the national level concerning equity and governance. In particular, realizing equitable governance of protected areas and the recognition and support of community conservation efforts should be paramount in achieving both target 18 and target 11 (on protected areas).

At the local level, there are several areas where certain types of initiatives have shown particular promise. Some of these are:

- Community Action Plans for the retention and inter-general transmission of Traditional Knowledge and promotion of Customary Sustainable Use;
- Indigenous and local community education or pluralistic education systems, which incorporate traditional languages and traditional knowledge, especially at the early childhood level[13].
- Traditional health care initiatives;
- Strengthening opportunities to learn and speak indigenous languages, including language revitalisation programmes;
- Culturally appropriate tourism policies and initiatives;
- Environmental research projects and data collecting based on the traditional methodologies of indigenous and local communities;
- Building of culturally appropriate business structures within communities (such as cooperatives);
- Developing technologies (such as agricultural tools) that focus on traditional methods of harvesting;
- Reestablishment of traditional spiritual/religious institutions);
- Creation of media, such as radio, newspapers and television stations controlled by indigenous and local communities, in local languages and with local content;
- Initiatives bringing together youth and Elders for inter-generational knowledge and language transmission;
- Creation and promotion of businesses offering traditional products and services;
- Strengthening institutions that foster traditional collection and distribution of food and other resources.
- Recognition and/or establishment of community conservation areas and more broadly diverse arrangements between governments and indigenous and local communities regarding the management of protected areas (see for example Kothari et al., 2012).

In all types of mechanisms and measures used to promote traditional knowledge, as well as cultural, social and economic well-being, it seems that capacity-building is crucial. This involves a significant commitment to building the educational, governance, management and professional capacity of indigenous and local communities, as well as cultural awareness programmes for governments and other stakeholders such as scientists or the private sector. It is also important to build the strength, infrastructure and capacity of indigenous and local institutions, such as governance structures, research bodies, economic structures, health care systems and education systems.

Key mechanisms at national level include national-level strategies, mechanisms, legislation or other appropriate initiatives such as national action plans, including *sui generis* systems, for promoting/protecting traditional knowledge and the customary sustainable use of

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[13] There are positive examples of intercultural bilingual (mother tongue) education available at
http://www.rutufoundation.org/en/examples/

biological diversity. This may include such activities as reviews of legal frameworks and practices, adoption of law reforms measures and/or *sui generis* systems for the protection, preservation and promotion of traditional knowledge, as well as communication, education and public awareness activities with a focus on awareness raising of the value of traditional knowledge and customary sustainable use of biodiversity, including production of indigenous and local language educational resources and materials, maintenance of information portals, development and promotion of case studies and operationalizing agreed indicators for traditional knowledge at local/national levels (land tenure, traditional occupations and traditional languages).

In order to more accurately monitor trends in language endangerment and to be able to identify where support and resources are most needed, more data is required, especially in Africa, where many countries do not collect language data in their censuses. National censuses are an important tool for collecting language data, but capacity-building is required to ensure the inclusion of questions on languages in all regions that is geographically and longitudinally comparable.

Capacity building initiatives to foster effective participation of indigenous and local communities in the implementation of Articles 8(j), 10(c) and related provisions at regional, national and sub-national levels are a critical element in achieving the suite of activities listed above.

2.b. Costs and Cost-benefit analysis

Target 18 is is regarded as both a cross-cutting issue and as an essential element of the "enabling" cluster, which will assist achieving all other Targets. Its effective attainment can assist the Parties in reaching other targets such as 11, 12, as well as 16.The effective implementation of Target 18 therefore can significantly contribute to preserving and promoting biological and genetic diversity, reduce the costs of protected areas management, as well as assist in climate change adaptation and maintain and improve eco-system services. Target 18 also contributes more broadly to the preservation and promotion of biological and cultural diversity.

The cost of not reaching Target 18, which would see traditional knowledge falling further into dis-use, is unfathomable. In losing knowledge, humanity and the ecosystems on which we depend will become less resilient, less able to adapt to change and more prone to environmental shocks such as those brought on by climate change. Diminishing traditional knowledge directly impacts on food security and on plant and animal diversity. Moreover, indigenous peoples and local communities have the right to maintain and transmit their own systems of knowledge as recognised most explicitly in Article 31 the United Nations Declaration on the Rights of Indigenous Peoples.

The total amount of resources needed on average by Parties to be able to meet Target 18, accomplishing the three activities over the period 2013-2020 would require USD 8.4m to 13.8m per country or on average USD 1.05m to 1.73m per year. The grand total for the

Secretariat costs associated with Article 8(j) and related provisions for the period 2013-2020 is estimated to be USD 18,876,000[14]. There is no cost estimate on the actions required by indigenous and local communities although their contributions to the goals of the Convention are immeasurable.

3. What are the implications for biodiversity in 2020?

Traditional knowledge can make a significant contribution to sustainable development, as well as conservation and sustainable use. Most indigenous and local communities are situated in areas where the vast majority of the world's biological and genetic resources are found. Many of them have cultivated and used biological diversity in a sustainable way for thousands of years. Some of their practices have been proven to enhance and promote biodiversity at the local level and aid in maintaining healthy ecosystems. However, the contribution of indigenous and local communities to the conservation and sustainable use of biological diversity goes far beyond their role as natural resource managers. Their skills, techniques and innovations provide valuable information to the global community and useful models for biodiversity policies. Furthermore, as on-site communities with extensive knowledge of local environments, indigenous and local communities are most directly involved with conservation and sustainable use. Indigenous and local communities are well placed to actively contribute to the management of protected areas, including their own Indigenous and local Community Conservation Areas, which can make a major contribution to achieving Aichi Biodiversity Targets 11 and 12.

4. What do scenarios suggest for 2050 and what are the implications for biodiversity?

The composite report (UNEP/CBD/WG8J/5/3) identified a significant number of international, national and local processes that may threaten the maintenance, preservation and application of traditional knowledge, innovations and practices, including:

1. Environmental threats (including environmental damage, climate change, invasive species);

2. Loss of indigenous languages;

3. Coerced imposition of other religions and value systems;

4. Continuing colonization and coerced assimilation;

5. Imposed exogenous education systems;

6. Objectification through tourism;

7. Militarization, conflict, insecurity and war;

8. Application of new technologies where there is a lack of opportunity for indigenous and local communities to adopt and adapt new technologies within their knowledge systems and to support respect, retention and maintenance of traditional knowledge;

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[14] UNEP/CBD/COP/11/INF/20, Input to the High Level Panel on Global Assessment of Resources for the implementing the Strategic Plan for Biodiversity 2011-2020.

9. Social disintegration, including high rates of suicide, incarceration and violent death;

10. Racism and discrimination;

11. Degraded health and well-being including poverty, HIV, and restrictions on traditional health practices and practitioners;

12. Destruction or reduced availability of traditional foods and medicines and food aid;

13. Gender issues; [15]/

14. Lack of capacity, including infrastructure, training, and financial and social capital;

15. Increasing populations – including young populations and low life expectancy;

16. Increasing urbanization, forced relocations and coerced migration resulting from, among other things dispossession, environmental damage and lack of economic opportunities;

17. Restrictions on self-governance and lack of participation in decision making processes;

18. Lack of respect for traditional knowledge, customary sustainable use and customary law, including lack of formal recognition by government and academia, and denigration of traditional knowledge and traditional knowledge holders in the general public;

19. Lack of security for indigenous and local communities' land tenure/usufruct rights and restrictions on access to traditional territories including sacred sites and protected areas;

20. Unsustainable economic development and degradation of ILCs' traditional economic bases;

21. Unsustainable exploitation of natural resources (with possible subcategories for fish, forests, etc.);

22. Globalization, including concentration of political and economic power and homogenization of cultural influences;

23. Misappropriation of traditional knowledge including through biotrade, bioprospecting, and weak/inappropriate intellectual property rights regimes.

Traditional knowledge, customary sustainable use and biological and cultural diversity are all at risk if Target 18 is not met as soon as possible or by 2020 at the latest. Not reaching target 18 will impact on other targets. Losing knowledge and diversity will also impact on food security, local resilience and adaptation to climate change. It is by no accident that the Parties to the Convention have identified articles 8(j), 10(c) and related provisions as cross-cutting issues, which can assist the implementation of the Strategic Plan and the Aichi Targets. At the same time, further progress is needed in the incorporation of traditional

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[15]/ Gender issues, including gender specific knowledge, need to be considered against a standard of non-discrimination and affirmative action, noting that indigenous and local community women and girls are particularly vulnerable to both internal and external discrimination.

knowledge and customary sustainable use in practical ways that can advance the effective on-the-ground implementation of the strategic plan and the other 19 Aichi Targets.

5. Uncertainties and data requirements / gaps

The achievement of Target 18 depends on political will and on the broader societal arrangements for accommodating indigenous, local and traditional communities. At the same time, indigenous and local communities, in the face of adversity have shown remarkable resilience. In recent times, national reconciliation processes, anti-discrimination laws and social justice processes, including legal processes to address traditional land tenure issues and improvements in the health and social well-being of indigenous and local communities have combined to create stronger resilient communities who are actively engaged in cultural restoration, including revival and transmission of traditional knowledge. At the same time many of the obstacles and forces undermining traditional knowledge continue to grow stronger.

In the context of broad global issues facing humanity, including the post 2015 development agenda and sustainable development goals, the fate of indigenous and local communities, their knowledge innovations and practices, lay very much in the balance. Increasingly indigenous and local communities participate in global discussions to both to defend their rights and to provide input into the many perplexing issues facing humanity.

6. Dashboard – Progress towards target 18[16]

Target Elements	Status	Comment	Confidence
Traditional knowledge, innovations and practices of indigenous and local communities are respected	Progress towards Target but not to achieve it	Processes are under way internationally and in a number of countries to strengthen respect for, recognition and promotion of, traditional knowledge and customary sustainable use	Medium
Traditional knowledge, innovations and practices are fully integrated and reflected in implementation of the Convention …	Progress towards Target but not to achieve it	Traditional knowledge and customary sustainable use need to be further integrated across all relevant actions under the Convention	Low

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[16] This provides a current assessment of progress towards the Aichi Biodiversity Target" based on the material presented in this chapter and the expert judgment of the authors of the GBO-4 Technical Report. It is subject to change as additional material becomes available, including information from national reports, NBSAPs and the BIP partnership.

… with the full and effective participation of indigenous and local communities	Progress towards Target but not to achieve it	Efforts continue to enhance the capacities of indigenous and local communities to participate meaningfully in relevant processes locally, nationally and internationally but limited funding and capacity remain obstacles	Low

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7. References

Anseeuw, W., Wily, L.A., Cotula, L., Taylor, M. 2012. Land Rights and the Rush for Land: Findings of the Global Commercial Pressures on Land Research Project. (Bending T, Wilson D, editors.). Rome: International Land Coalition.

Ballard, M. 2012. Flooding Sustainable Livelihoods of the Lake St. Martin First Nation: The Need to Enhance the Role of Gender and Language in Anishinaabe Knowledge Systems. University of Manitoba.

CBD 2009. Indicators for Assessing Progress towards the 2010 Biodiversity Target Status of Traditional Knowledge, Innovations, and Practices: Analysis of the Information Available on Proposed Indicators (UNEP/CBD?WG8J/6/2/Add.4/Rev.1).

Grimes, J. (1986.) Area norms of language size. In B.F. Elson, ed., Language in global perspective: Papers in honor of the 50th anniversary of the Summer Institute of Linguistics, 1935-1985, pp.5-19. Dallas: Summer Institute of Linguistics.

Hammarström, H. 2005. Review of the Ethnologue, 15th Ed., Raymond J. Gordon (ed.), SIL International, Dallas, 2005. LINGUIST LIST 16.2637 12 Sept 2005.

Harmon, D., Loh, J. 2010. The Index of Linguistic Diversity: A New Quantitative Measure of Trends in the Status of the World's Languages. Language Documentation and Conservation 4:97–151.

Heckler, S. 2002. Traditional Ethnobotanical Knowledge Loss and Gender among the Piaoroa. In J.R. Stepp, F. Wyndham and R. Zarger (eds.), Ethnobiology and Biocultural Diversity. Athens, GA: The International Society of Ethnobiology.

Kothari, A., Corrigan, C., Jonas, H., Neumann, A., & Shrumm, H. (eds.). (2012). Recognising and Supporting Territories and Areas Conserved by Indigenous Peoples and Local Communities: Global Overview and National Case Studies. Montreal: Secretariat of the Convention on Biological Diversity.

Larsen, F.W., Turner, W.R., Brooks, T.M. 2012. Conserving critical sites for biodiversity provides disproportionate benefits to people. PloS one [Internet] 7:e36971. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3364245&tool=pmcentrez&rendertype=abstract

Minasyan, A. (2013). On linkages between linguistic diversity, traditional knowledge, and biodiversity, and UNESCO's recent work in this area. In L. Anathea Brooks and Salvatore Arico (eds.), Tracking Key Trends in Biodiversity Science and Policy, 95-97, UNESCO.

Moseley, C. 2010. Atlas of the World's Languages in Danger. Paris: UNESCO.

Paolillo, J.C. (in preparation). Evaluation of UNESCO's Language Population Database: Trends in the diversity and endangerment of languages.

Paolillo, J. C., & Das, A. (2006). Evaluating language statistics: The Ethnologue and beyond. Contract report for UNESCO Institute for Statistics.

Tucker 1999. A Global Perspective on Bilingualism and Bilingual Education. In: Georgetown University Round Table on Languages and Linguistics - Language in Our Time: Bilingual Education and Official English, Ebonics and Standard English, Immigration and the Unz Initiative. Alatis, J.E., Tan, A.-H. (eds.), Georgetown University Press: 332-340.

UN-Habitat 2011. Securing Land Rights for Indigenous Peoples in Cities. Nairobi.

Zent, S. 2001. Acculturation and ethnobotanical knowledge loss among the Piaroa of Venezuela: demonstration of a quantitative method for the empirical study of traditional ecological knowledge change. In: Maffi. L. (ed.). On Biocultural Diversity: Linking Language, Knowledge, and the Environment. Washington DC, Smithsonian Institution Press: 190–211.