

# Traditional knowledge across scales for achieving the CBD Aichi Biodiversity Targets - lessons learnt

The potential of indigenous and local knowledge to contribute to ecosystem assessments and governance also beyond local scale is increasingly recognized. How can such knowledge based on genuine local experience be mobilized for improved decisions across scales? This policy brief builds on a study of lessons learned so far from developing and monitoring of traditional knowledge indicators for Aichi Target 18 on traditional knowledge, innovations and practices. The study is based on interviews with a variety of actors, including traditional knowledge holders, national policy-makers, and scientists.

The importance of including indigenous peoples and local communities (IPLCs) and their traditional knowledge (TK) into environmental forums such as the Convention on Biological Diversity (CBD) and the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) is increasingly recognized (13). This stems in large from a growing understanding of humans and ecosystems as interconnected, complex social-ecological systems, requiring new approaches to governance, and institutions that connect diverse knowledge systems (3, 8, 12). In addition, ecosystem and biodiversity monitoring have always been an integral part of indigenous and local management systems. In many parts of the world indigenous and local knowledge might be the only source of ecosystem knowledge (6). Despite numerous efforts to open up sustainability forums and assessment processes to diverse types of knowledge and knowledge holders, extensive challenges remain.

### Box 1. Terms and acronyms

<b>CBD</b>	Convention on Biological Diversity
<b>IPBES</b>	Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services
<b>TK</b>	Traditional Knowledge
<b>IPLCs</b>	Indigenous Peoples and Local Communities

Developing mechanisms and processes that are truly inclusive and allow for the full and effective participation of IPLCs on equal terms into monitoring and assessment processes, including the design, analysis and conclusions of the outcomes, is urgent to widen our global capacity to meet the sustainability challenges of our time.



Eco-cultural mapping of Kathita River, Tharaka, Kenya, August 2014. One of many methods used by communities for monitoring and mobilizing their bio-cultural diversity and resources. Photo: P. Malmer

## Challenges and opportunities for mobilization of traditional knowledge across scales

Assessments of ecosystem change and its impact on human well-being have become a mayor issue in intergovernmental forums. Although concluded that assessments have much to gain from the mobilisation of TK, assessment exercises that combine knowledge from different knowledge systems are faced with extensive challenges, including contrasting views on knowledge that are based in fundamentally different worldviews. In addition, assessments that combine multiple ways of knowing also need to deal with issues of scale. Choosing at what scale an assessment should be performed, intentionally or unintentionally benefit certain groups by limiting the problems addressed, the explanations sought, and the interpretations of the findings (2, 8).

Assessments are often based on indicators, which constitute an important tool to guide policy-decisions. Indicators are value-laden. They guide what is to be monitored and what data that is to be collected, and hence also determines what is considered of importance.

Most international and national biodiversity indicators are based on national statistics that do generally not reflect the situation of indigenous peoples (10). However, development of indicators that take the perspectives of indigenous peoples into account are under way in several international forums, including the CBD (9). Such processes have become powerful not only for generating important data of the environment for the society at large, but also for the mobilization of the perspectives of the IPLCs, and for claiming their rights as holders of important knowledge and for participation at all levels, from the local to the international.

## Three case examples of traditional knowledge mobilized at global, national and local scale

### International level (Top-down approach)

Indicators for Aichi Target 18. Aggregation initiated from the Secretariat of the CBD (SCBD). Indicators based on statistical data.

**Four indicators were adopted between year 2004-2010 by CBD to monitor progress of Aichi Target 18 (AT18). Mandate was given to UNESCO, ILO, and FAO to develop frameworks and methodology for collecting data to monitor the indicators. The indicators were to be based on globally available data, such as national census data already collected by States. Due to lack of funds or other priorities, UNESCO is currently the only one of the three organisations proceeding work on the AT18-indicators.**

#### Indicator development and monitoring

Identification of indicators has been undertaken at SBSTTA and WG8(j), as well as through international and regional workshops initiated by e.g. the International Indigenous Forum on Biodiversity (IIFB), the Biodiversity Indicators Partnership (BIP) and the SCBD. UNESCO is collecting national data to create a global picture of the status and trends in indigenous languages. Developed by an intergovernmental organisation and expected to rely on scientific expertise and national statistics the case is an

### Box 2. Traditional knowledge indicators for Aichi Target 18

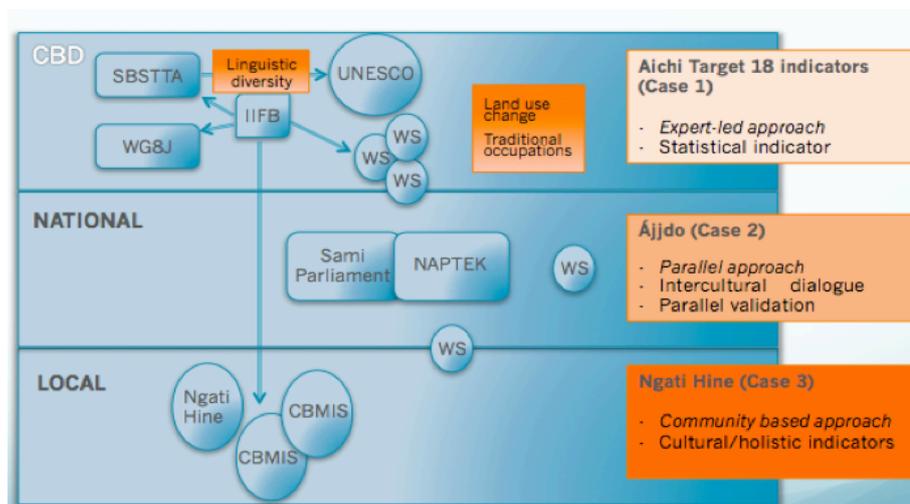
In 2010, the CBD adopted the 2020 Aichi Biodiversity Targets.

Aichi Target 18 (AT18) states that by 2020 traditional knowledge, innovations and practices are to be respected and protected, and fully integrated and reflected in the implementation of the CBD.

Four indicators have been adopted to monitor progress towards the target:

- Trends in linguistic diversity and numbers of speakers of indigenous languages (decision VII/30 and VIII/15)
- Trends in land-use change and land tenure in the traditional territories of indigenous and local communities (decision X/43)
- Trends in practice of traditional occupations (decision X/43)
- Trends in degree to which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation in the national implementation of the Strategic Plan (Ad Hoc Open-ended Working Group on the Review of Implementation)

example of a top-down approach to developing and monitoring indicators, although indigenous identification of indicators has been undertaken at several workshops and forums. The information is presented in e.g. the Global Biodiversity Outlook (GBO) and in the Aichi Passport and is mainly directed towards policy makers. However, the indicators are also actively used by IPLCs themselves to raise awareness in their local communities of e.g. the issue of decreasing linguistic diversity.



**Figure 1. Three examples of mobilizing traditional knowledge across scales.** The figure illustrates three case studies where actors at different levels (global, national, local) are engaged in efforts to operationalize the Aichi Target 18 indicators (Box 2), as well as the interaction between bodies at different levels. Case 1 explores the development of the AT18 indicators of the CBD. Case 2 is a collaborative project where NAPTEK, the Swedish implementation agency of Article8(j), and the Sami Parliament, have tried to operationalize the AT18-indicators at national level, and case 3 demonstrates an indigenous tribe in New Zealand using community led approaches to indicators and which through the CBMIS-network mobilizes TK knowledge across scales. The cases provide insights to different approaches to mobilizing traditional knowledge, and guidance for future practices. (See next page for more information about the cases, and Box 3 for abbreviations used in the figure).



From CBD regional capacity building workshop on traditional knowledge and customary sustainable use. Te Tui Shortland (left) from Ngati Hine share the tribes experiences about Community Based Monitoring and Information System (CBMIS) with indigenous colleagues from Asia. Chiang Mai, Thailand June 2014. Photo: P. Malmer

### National level (Parallel approach)

Ájido. Initiated by the Saami Parliament together with NAPTEK at the Swedish Biodiversity Centre (CBM). Science and Sami traditional knowledge represented equally in parallel.

**The project “Ájido” was a collaboration between the Sami Parliament (SP) and NAPTEK, the Swedish implementation agency of Article 8(j). The initial objective of the project was to operationalise the AT18-indicator “Trends in land-use change and land tenure in the traditional territories of indigenous and local communities” (see Box 2), while simultaneously piloting methods for mobilizing parallel accounts of TK and scientific knowledge.**

#### Indicator development and monitoring

The project was elaborated in continuous dialogue between the SP, NAPTEK (policy-makers and scientists) and Sami knowledge holders. The approach was to use a functioning reindeer husbandry as an indicator for a non fragmented landscape and

a viable Sami culture. As difficulties with strengthening this causal link became apparent, the project shifted focus from “the reindeer as an indicator” to instead produce a knowledge compilation of the relationship between Sami reindeer herding and biological diversity. Accounts from scientific literature was placed parallel with findings from interviews by young Sami with older generation reindeer herders from their communities. The knowledge compilation is disseminated to authorities, scientists and Sami for awareness raising.

### Local level (Community led approach)

Ngati Hine. Initiated by Ngati Hine for local purposes, and later contributed as a case for operationalization of Target 18.

**Ngati Hine is an indigenous tribe in New Zealand that is part of the global CBMIS-network, launched by the IIFB, which encourages development and systematization of community-based monitoring for operationalization of the AT18-indicators. The tribe is also testing out alternative holistic indicators, adapted to the local conditions and relevant for the community.**

#### Indicator development and monitoring

In Ngati Hine, cultural indicators are used to monitor and manage the ecosystem as well as a tool for claiming rights to their territory and maintaining and transferring TK to younger generations. Initiative and ownership of the process lies at Ngati Hine community level. All involvement of outsider scientists occurs on the community’s terms. The indicators and the monitoring system are based on Ngati Hine cosmology and monitors both the ecosystem and TK in a holistic and adaptive way. They are focusing on a few cultural key-indicators, keeping it simple, in order for the community to be able to perform the monitoring. The use of ‘cultural indicators’ transmits traditions and knowledge through the direct interaction with the ecosystem and with other community members. On request from national authorities, Ngati Hine is today leading a national pilot project on monitoring and habitat enhancement for eels.

#### Box 3. Terms and acronyms

<b>Article 8(j)</b>	The Article in the CBD for in-situ conservation of traditional knowledge, innovations and practices
<b>Article 10(c)</b>	The Article in the CBD recognizing Customary Sustainable Use
<b>BIP</b>	Biodiversity Indicator Partnership
<b>CBM</b>	Swedish Biodiversity Centre
<b>CBMIS</b>	Community Based Monitoring and Information Systems
<b>COP</b>	Conference of the Parties
<b>FAO</b>	Food and Agriculture Organisation of the United Nations
<b>GBO</b>	Global Biodiversity Outlook
<b>IIFB</b>	International Indigenous Forum on Biodiversity
<b>ILO</b>	International Labour Organisation
<b>Naptek</b>	Sweden’s implementary agency for article 8(j)
<b>SBSTTA</b>	Subsidiary Body on Scientific, Technical and Technological advice of the CBD
<b>SCBD</b>	Secretariat of the Convention on Biological Diversity
<b>SP</b>	Sami Parliament
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>WG8(j)</b>	Ad Hoc Open-ended Working group on article 8(j) and related provisions
<b>WS</b>	Workshop



Reindeer herding contributes to maintain biodiversity in the Sápmi cultural landscape. Saltoluokta in the Lapponia World Heritage Area, Sweden. Photo: P. Malmer

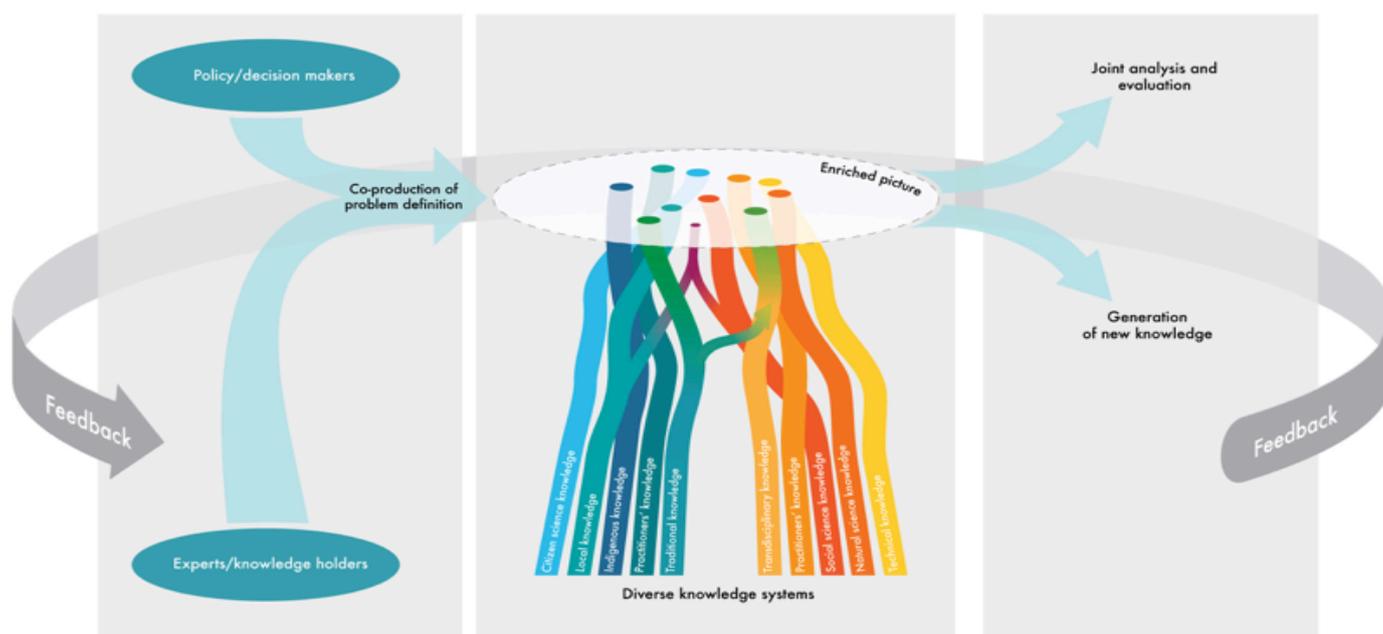
## Lessons learnt from the three examples

The development of the AT18-indicators has given holders of traditional knowledge and their organisations opportunities to express their issues and contribute with experiences and values at the international and regional indicator-workshops, further at the CBD WG8(j) and SBSTTA meetings, and finally in decisions at CBD COP meetings.

This process has served to mobilize actors and has led to inspiration and commitment to the monitoring and analysis of data, with IIFB taking the lead. It has for example inspired IPLCs to start a process of systematising their diverse monitoring systems through CBMIS, and to access policy processes that before were out of reach (11). Thus, even though the AT18-indicators in themselves exhibit a range of challenges (e.g. difficulties with operationalization at national level), the process of discussing the reality of IPLCs through the negotiation and development of indicators, was in itself important and have contributed to the mobilization

of knowledge. Community led identification, development, and monitoring of indicators, such as in the Ájido and Ngati Hine case studies, have in many cases proven more efficient and apt than global indicators due to several reasons. Local monitoring and indicators are often holistic and adaptive in nature, covering environmental, social, economic, and institutional aspects, which has been acknowledged as important features for sustainability indicators.

In addition, community led monitoring recognizes spatial heterogeneity and addresses local issues and key threats, with potential for more salient, effective and democratic decision-making. Not least, community-based monitoring also has the potential of building local capacity and empowering communities to improve resource management and livelihoods while simultaneously raising attention to their knowledge contributions



**Figure 2. Multiple Evidence Base.** A MEB-approach emphasizes co-production of problem-definition as well as a joint analysis of the enriched picture that emerges through the assessment process. Three phases are outlined in a MEB-approach: In phase 1 the problems and goals are defined through a collaborative manner, setting the stage for an on-going dialogue by building partnerships and networks at different levels. Phase 2 brings together knowledge on an equal platform by using parallel methods and criteria for validation of knowledge. This includes acknowledging diverging as well as converging evidence and perspectives across knowledge systems. In Phase 3 a joint analysis and evaluation of the insights is performed. This involves identifying continuing knowledge gaps as well as new hypothesis and potentials for future collaboration between knowledge systems (For a more detailed description of the MEB-approach see Tengö et al. 2014).

and their rights to self-determination at higher scales (4, 5, 7). This study of the development of the Aichi target indicators for traditional knowledge speaks in the same direction. Although IPLCs have gained increased recognition, mobilization of TK across scales is still faced with barriers connected to ideas of what is considered legitimate and valuable knowledge. It is thus important to develop tools and methods that can alter such perceptions in order for the local and national level to connect, and so that funding and support can secure the sustainability of locally based initiatives such as the CBMIS.

Case 2, Ájido, demonstrates a potential approach in which traditional knowledge-holders can mobilize their knowledge across scales, as complementary and in parallel with e.g. scientific knowledge. This approach has been referred to as a Multiple Evidence Based (MEB) approach. The core idea of the MEB is illustrated above, in figure 2.

## Looking ahead

The study of three different initiatives illustrates that there are multiple ways forward to work collaboratively to scale up traditional knowledge and mobilize IPLCs as knowledge holders in global processes. Our findings indicate that there is great potential for community-based approaches that can monitor progress towards Aichi Target 18 and simultaneously create opportunities for engagement and influence of IPLCs. Furthermore, it can also contribute to reinvigoration of customary governance systems that can improve management of ecosystems and biodiversity in local places. Looking towards IPLCs monitoring and information systems can also provide insights on aspects that have so far received limited attention, for example into how complex interactions between ecosystem change and human well-being can be monitored (1).

A study that assessed monitoring possibilities for 12 international environmental agreements, including the CBD Aichi Targets, found that 63% of the 186 indicators could involve community members as “citizen scientists” (5). Supporting community based monitoring and initiatives such as the CB-MIS-network could thus significantly enrich monitoring within global conventions as it in addition to just monitoring status and trends in TK further has the potential of actually implementing the CBD and its agreed targets. There is also great potential to pursue different approaches and learn across initiatives, to not only create incentives for participation, but also actually enable IPLCs to influence the outputs and decisions that are produced (7).

Mobilisation of TK across scales calls for a change in paradigm in what is considered valid and valuable knowledge. This includes recognition of that ideas of sustainability and conservation of

biodiversity can be more usefully seen as an open-ended processes of learning, rather than clearly defined end goals (3). Such a shift in focus implies that greater emphasis needs to be put on legitimacy and usefulness of the knowledge generation processes and not just on the credibility of the assessment outcomes. For example, the global indicators of TK (Aichi target 18) has proven challenging to operationalize but has created opportunity for actors to meet and IPLC to advocate their knowledge and issues. In other words, we need to move further from “integration of knowledge forms” to the “mobilization of knowledge actors” in legitimate, equal, and transparent ways.

The MEB approach offers a potential way forward. It recognizes and cherishes a plurality of perspectives and validation systems, and encourages collaborative problem framing and agenda setting, while bringing biases and conflicting views into the open. The Conference of the Parties of the CBD, requests Parties, working groups and organisations in their latest draft decision (XII/12) from COP 12, October 2014, to further explore the added value of contributions from Community Based Monitoring and Information Systems and of applying a MEB-approach when monitoring AT18-indicators. In line with this, CBMIS and MEB-initiatives may contribute as methods and as sources of knowledge to IPBES thematic and regional assessments.



*Picture: Community Based Monitoring and Information Systems is applied in Tinoc, Ifuago, Philippines, for land use planning and community development. Photo: P. Malmer*



*The Community Library in Hin Lad Nai, Chiang Rai Province, Thailand. The Karen village has documented their rotational farming systems and practices and proved its sustainability. Photo: P. Malmer*

## Summary

- Monitoring of Aichi Target 18 strengthens opportunities for the full and effective participation of IPLCs into policy processes at national and international levels. There is great potential in expanding the lessons learned from Aichi target 18 also to other targets, such as target 14, on ecosystem services and human wellbeing, and target 11, on protected areas.
- Community led or parallel approaches to indicators and assessments that monitor issues that are of local relevance are more apt than top-down approaches for encouraging implementation of the CBD.
- Initiatives such as the CBMIS have potential to extend monitoring from primarily biological monitoring, to social aspects that includes values, behaviour, human well-being as dependent on biodiversity and ecosystems.
- It is an advantage if community led assessments feed into higher-level decision-making forums as it also creates higher attention to them in their regional and national context by policy-makers.
- Mobilisation of TK across scales call for new flexible forms of multi-level governance, where legitimacy and usefulness of the assessment process (defining, negotiating, developing and monitoring of indicators) becomes as important as the assessment outcome.
- A Multiple Evidence Based approach can be useful to work with diverse knowledge systems and could contribute to a mind-shift in what is considered valid and valuable knowledge in monitoring and assessments.

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## About SwedBio

SwedBio at Stockholm Resilience Centre is a knowledge interface working for resilient ecosystem management and governance through policy and methods development, facilitation of dialogues, contributions to strategic programmes in developing countries and learning from the international partners, science and other knowledge systems for co-production of knowledge for later dissemination.

SwedBio's objective is to contribute to poverty alleviation, sustainable livelihoods, equity and human wellbeing through development towards resilient ecosystems and societies, especially taking into account the need for adaptation and mitigation to ecosystems change such as climate change. To reach this aim SwedBio promotes sustainable ecosystem management – in a landscape and seascape perspective – and development of good governance.

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