

Knowledge for the 21st Century

Dialogue workshop | Guna Yala, Panama | 10–13 April 2012

Indigenous knowledge,
traditional knowledge,
science and connecting
diverse knowledge
systems



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For presentations, background documents, relevant literature and further information about the dialogue workshop, visit the website:

www.dialogueseminars.net

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Preface

This report is a summary of the dialogue workshop on “*Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems*” held in Usdub, Guna Yala, Panama 10-13 April, 2012. The workshop was kindly hosted by the Fundación para la Promoción del Conocimiento Indígena (FPCI) based in Panama. The report summarizes the presentations and the discussions of the dialogue in Guna Yala and includes reflections submitted from the group to the second session of the plenary to establish the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) held in Panama City April 15-22, 2012. The report has been compiled by Maria Tengö and Pernilla Malmer, Stockholm Resilience Centre (SRC) supported by Chico Cariño, Exeter University/ Tebtebba Foundation, Alancay Morales, Forest Peoples Programme (FPP) and the International Co-ordinating Team, which consists of Pernilla Malmer and Maria Schultz, The Resilience and Development Programme – SwedBio at SRC, Maria Tengö, SRC, Marie Kvarnström, NAPTEK at the Swedish Biodiversity Centre (CBM), Joji Cariño, Tebtebba Foundation/International Indigenous Forum on Biodiversity (IIFB), Malia Nobrega, Waikiki Hawaiian Civic Club/IIFB, and Onel Masardule, FPCI/IIFB. Yvonne Vizina, Tirso Gonzales, Jorge Ishizawa, Rosa Soto Martinez and Patricia Borraz have also contributed to the production of the report. A draft report was circulated among participants generating additional important contributions.

The International Co-ordinating Team takes the opportunity to warmly thank all the dialogue workshop participants for their impressive commitment to maintain and bring forward the spirit of the rich dialogue jointly created in Guna Yala. It is the hope of all the writers that the richness of perspectives of ideas and insights expressed, developed, and shared during the workshop are covered in this report and that it is a useful resource for all readers. The International Co-ordinating Team prepared the executive summary of the report and take full responsibility for it. The report as well as the presentations made at the dialogue workshop and background material is available at the webpage www.dialogueseminars.net/Panama/.



Photo: Fotógrafos sin fronteras, Usdub

Executive Summary

The overarching goal of the “Dialogue workshop on Knowledge for the 21st Century” in Guna Yala, Panama was to facilitate better exchange and cross-fertilization among diverse knowledge systems in an equal, legitimate, and transparent way, for the benefit of sustainable management of biodiversity and ecosystems. The aim was to influence in particular the IPBES¹ process, as the workshop was held in association with the second session of the plenary to establish IPBES, but also other relevant initiatives such as Sub-Global Assessments² (SGAs), the Programme on Ecosystem Change in Society³ (PECS), and the Convention on Biological Diversity⁴ (CBD), as well as more bottom-up driven initiatives such as cultural revitalization projects carried out by communities, NGOs, and others. Participants included about 50 representatives from scientific organizations, governments, funders, UN bodies, Indigenous Peoples⁵ and local communities, international organizations and non-governmental organizations (NGOs) from all continents of the world, with rich experiences from a diversity of knowledge systems.

The dialogue covered a range of challenges and opportunities for cross-fertilization of knowledge identified over the project’s earlier process, starting from the Jokkmokk meeting in June 2011.⁶

The context of connecting diverse knowledge systems was outlined and discussed, with particular focus on understanding and respecting diversity of ways of knowing and key factors behind successful cases of exchange between knowledge systems. It was acknowledged that indigenous, traditional, local and scientific knowledge systems are different manifestations of valid and useful forms of knowledge, which can contribute to sustainable management of ecosystems, and that there are complementarities as well as new ideas and innovations to be gained from cross-fertilization.

It was clear in the dialogue that there are many different approaches for exchange among knowledge systems, and that the attitudes framing the exchange are essential. The following primary principles were brought forward: *respect* for diverse knowledge systems, *trust*, *reciprocity* and *equal sharing*. Other key factors for successful exchange include: long-term commitment, respecting customary practices, communication on equal terms, modesty in relation to one’s own knowledge system, ethical codes of conduct, including the elders and youth of a community, and acknowledging and embracing intergenerational learning. The unique nature of women’s knowledge needs to be recognized and valued across knowledge systems. Learning and knowledge also relate to spiritual belief systems, including locally based understanding of the relationships between nature, humans, and deities. A holistic paradigm embraces and makes explicit moral norms and ethics about human-nature relations. One illustration of this is the notion that we need to move from the

¹ www.ipbes.net. IPBES stands for ‘Intergovernmental Platform on Biodiversity and Ecosystem Services’. IPBES will be an interface between the scientific community and policy makers that aims to build capacity for and strengthen the use of science in policy making.

² www.ecosystemassessments.net

³ See <http://www.stockholmresilience.org/research/researchprogrammes/pecs> or <http://www.icsu.org/what-we-do/interdisciplinary-bodies/pecs/>

⁴ See www.cbd.int

⁵ In this text, we have chosen to capitalize the term Indigenous Peoples as a sign of respect and analogous with capitalization of names of nations.

⁶ Report from an informal expert meeting with representatives of the International Indigenous Forum on Biodiversity (IIFB), EU experts and scientists engaged in TK and IPBES. Jokkmokk June 21-22, 2011. <http://www.dialogueseminars.net/resources/Panama/Reading/C.-Knowledge-systems/jokkmokk-report-on-knowledge-system-exchange.pdf>

*Anthropocene*⁷ to the culturally affirming *Pachacene*, where Pacha is an Andean word for the Earth that encompasses the relationship between people, the Earth and deities or spirits, where also cultural reaffirmation is emphasized. In relation to institutional frameworks for exchange, such as the IPBES or within the CBD, it was emphasized that a broader inclusiveness of diverse knowledge systems is needed from the start, and that reductionistic frameworks will inhibit exchange and reduce the likelihood of success.

As noted above, the overall aim of the workshop was to contribute to strengthened exchange and cross-fertilization between knowledge systems concerning ecosystems and human-nature relationships in an equal, legitimate, and transparent way. In relation to this, the dialogue focused in particular on *validation, documentation, sharing of knowledge* and *co-production of knowledge*. The following perspectives were given by the participants concerning validation: Validation of diverse knowledge systems in ways where one knowledge system applies its validation methods on another system is not desirable and comes at a cost with respect to the integrity and complexity of knowledge systems. Biocultural systems that are functioning in a sustainable way should be identified and valued irrespective of science-based validation. Indigenous knowledges are formal bodies of knowledge, acknowledged by leaders and each with its own status. Local, traditional and indigenous knowledge systems have their own internal systems for validation. However, it should be noted that there are also examples where validation of community-based knowledge by science could, depending on the context and process, contribute to mutual learning and empowerment of those same communities. To validate or evaluate knowledge across knowledge system is a challenge that needs further consideration. Different kinds of validation or evaluation practices could be described as empirical, procedural, cultural (collective), or moral. Validation in science is mainly based on empirical and procedural methods. It was concluded that we need to look further into procedural validation that recognizes diverse knowledge systems, and also the potential and implications of cultural and moral validation practices in ecosystem assessments. Rather than applying science-based mechanisms to validate other knowledge systems, separate protocols determining validation mechanisms for diverse knowledge systems are suggested.

In relation to documenting and sharing knowledge, it was recognized that knowledge systems are dynamic, and databases and other kinds of documentation may give a static picture that does not reflect current understanding, if not continuously updated. For some knowledge, databases could be useful for building and disseminating knowledge, however sacred and secret knowledge should be “no go”, i.e. respected as knowledge belonging only to specific individuals or groups and not accessible to outsiders under any circumstances. Knowledge holders should be encouraged to and supported in performing risk assessments of documenting and sharing knowledge, with particular attention paid to transmission of knowledge beyond the parties directly involved. Free, Prior and Informed Consent should always be applied, and clear agreements on mutual terms have to be made between the community/ knowledge holders, and external researchers. Landscapes are living libraries of knowledge and should be maintained and nurtured as such. It was also emphasized that education at all levels needs to recognize and promote the value of diverse knowledge systems. Formal education needs to find new and enriching modalities of being multilingual and intercultural, by valuing local, traditional and indigenous knowledge at all levels.

⁷ Crutzen, P. J. 2002. "Geology of mankind: the Anthropocene." *Nature* 415:23. The Anthropocene defines Earth's present geologic time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that atmospheric, geologic, hydrologic, biospheric and other earth system processes are now altered by humans.

An additional aim was to contribute to novel approaches for inclusion of diverse knowledge systems into knowledge generation, ecosystem assessments and capacity building in knowledge related processes such as in the IPBES. Approaches that were discussed and developed during the workshop included: a dual based evidence approach, alternative protocols for validation, co-production of knowledge, connecting and learning across scales, and starting from bottom-up mapping of knowledge and ecosystems. The dual based evidence is an approach where science and other knowledge systems are recognized as equal and validated in parallel using separate protocols. This requires alternative approaches for evaluating knowledge, whose nature and mechanisms need to be discussed and developed in an open, collaborative way. Co-production of knowledge involves indigenous-scientific formulation of novel research questions, collaborative methods for data gathering, flexible arrangements for interaction, complementary data sets, and mutual respect for approaches, worldviews and knowledge systems. It was acknowledged that the dialogue had mainly been concerned with indigenous and traditional knowledge, and the need was felt to further include also local knowledge and practitioners' knowledge.

The last day of the workshop was dedicated to promoting diversity of knowledge as an underlying principle in ecosystem assessments and in the work of the IPBES. The group elaborated a series of principles and values recognised to be important for a continuous dialogue in IPBES and other fora, and to create a productive, effective and respectful space for the interaction of all interested actors (see Appendix 1).⁸ It recognised that diverse knowledge systems, including indigenous, traditional, local and practitioners knowledge, comprise a cross-cutting issue in the rules of procedure of IPBES as well as in its functions, activities, and future work. Indigenous Peoples and local communities should be included as experts and knowledge holders in addition to their role as stakeholders. In addition to the principles mentioned above, the specific recommendations for IPBES included support for sub-global and local assessments, a mechanism for fostering a respectful intercultural dialogue, a space for developing evaluation procedures that fully recognize diverse knowledge systems, and building on and further developing existing guidelines.

The dialogue workshop helped inform the second session of the plenary meeting to establish the IPBES in Panama, and seem to have bolstered openness and support for indigenous knowledge and diverse knowledge systems in the work of the IPBES. Organisers and participants of the Guna Yala workshop presented the initial outcomes at the Stakeholder Forum on 15 April 2012, arranged a side event during the IPBES meeting later that week, and were also present at the IPBES meeting as part of delegations from governments, international organisations, Indigenous Peoples and local community organisations, civil society and science organisations. Their contribution to the meeting was inspired by reflections and outcomes from the workshop.

The IPBES' second session of the plenary meeting generated several important outcomes with relevance to indigenous and local knowledge and knowledge holders:⁹

⁸ Initial reflections from a knowledge dialogue for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems. 15 April 2012

⁹ UNEP/IPBES.MI/2/9

- » A Multidisciplinary Expert Panel¹⁰ will be established that will carry out the scientific and technical functions. It was agreed that this Multidisciplinary Expert Panel will be structured by a process with broad participation.
- » Texts in the decisions from the IPBES meeting refers to both stakeholders and knowledge holders, for example text under operating principles states that “the platform should collaborate with networks of knowledge holders” and that the platform should “recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems”.
- » Regarding the scientific functions the meeting agreed to “Engaging the scientific community and other knowledge holders with the work programme, taking into account the need for different disciplines and types of knowledge, gender balance, and effective contribution and participation by experts from developing countries; and to “Exploring ways and means to bring different knowledge systems, including indigenous knowledge systems, into the science-policy interface.”
- » Indigenous Peoples and local communities may participate in the Plenary of the Platform as observers. The plenary is encouraged to take into account, as appropriate, inputs and suggestions made by relevant stakeholders, such as Indigenous Peoples and local communities.
- » Regarding the inter-sessional work and the preparations for an initial work programme, the Secretariat was requested to compile a critical review of assessments including experiences with the integration of knowledge systems.

Based on the Guna Yala dialogue, the International Co-ordination Team has identified a set of potential pathways to strengthen knowledge platforms on biological and cultural diversity, of general interest as well as more specifically targeting the IPBES:

- » To continue dialogue processes over topics identified from Guna Yala, for example on legitimate ways of evaluating knowledge across knowledge systems, and safe ways of sharing knowledge.
- » Linking with new and on-going processes relevant for connecting diverse knowledge systems.
- » Compilation of experiences, case studies and resources about exchanges and complementarities between knowledge systems. Identify good experiences and map out initiatives where knowledge sharing across scales has taken place to examine methods, best practices and strategies. This can potentially be further developed to a web-based and interactive database, to which interested users can upload their contributions, and comments.
- » Further investigate and develop the dual based evidence approach in a collaborative manner, with potential implications for IPBES and other processes.

¹⁰ The agreed definition regarding “Multidisciplinarity” was that it connotes an approach that crosses many disciplinary boundaries, knowledge systems and approaches to create a holistic approach, focusing on complex problems that require expertise across two or more disciplines. Multidisciplinarity arises when scientists (including natural and social scientists), policy and technical experts, natural resource managers, other relevant knowledge holders and users, interact in an open discussion and dialogue giving consideration to each perspective.

- » Map and further develop methods for co-production of knowledge built on joint formulation of novel research questions, collaborative methods for data gathering and complementary data sets – qualitative along with quantitative, holistic along with reductionist, and natural science along with social science.
- » Map case studies and analyse ways of regenerating ways of knowing and learning, as well as cultural revitalization and reaffirmation processes in relation to ecosystem management.
- » Contribute to the process of realising the full potential of customary sustainable use of biodiversity, such as in the implementation of CBD.

In addition, participants in the Guna Yala dialogue identified the importance of developing ways to effectively integrate local and traditional knowledge into all the IPBES processes. More specifically, this could include:

- » Capacity building on aspects of relevance for connecting diverse knowledge systems among different knowledge holders, including researchers and policymakers.
- » Contributing to development of conceptual framework and methodology for realising the potential of IPBES as a diverse knowledge platform in the IPBES Programme of Work.
- » Contributing to intersessional work on the preparations for an initial work programme, in particular the critical review of assessments including experiences of integration of knowledge systems.
- » Creation of a forum for developing parallel procedures for evaluating diverse knowledge in ecosystem assessments.
- » Efforts to realize the potential of diverse knowledge systems in Sub-Global Assessments.

The Guna Yala dialogue concluded on a positive note based on the shared knowledge and learning that had taken place among the participants. It is the hope and belief of the International Co-ordinating Team that the platform for dialogue that was mutually created will continue to develop dynamically and fruitfully through the network created, as well as through a third phase of the Knowledge Dialogue Project.



Photo: Pilakiler Castro

About the Knowledge Dialogue Project and Guna Yala workshop

Background

Indigenous Peoples and local community representatives, scientists, international organizations, and NGOs are deeply concerned about the degradation of ecosystems and loss of biodiversity. The concern led to practical action manifested in the establishment of a Dialogue Project for the interaction of diverse knowledge systems (traditional, indigenous, local, and scientific) called “*Dialogue on Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems*” to address collective concerns in a holistic and open manner. The Dialogue Project was initiated in 2011 by The Resilience and Development Programme (SwedBio) at the Stockholm Resilience Centre (SRC) and The National Programme on Local and Traditional Knowledge Concerning the Conservation and Sustainable Use of Biological Diversity (NAPTEK) at the Swedish Biodiversity Centre (CBM). The dialogue workshop in Guna Yala was convened under this project together with the International Indigenous Forum for Biodiversity (IIFB). The goal of the workshop in Guna Yala was to facilitate better exchange and cross-fertilization among diverse knowledge systems in an equal, legitimate, and transparent way, for the benefit of IPBES, Sub-Global Assessments¹¹ (SGAs), the Programme on Ecosystem Change in Society¹² (PECS), and other relevant initiatives. Furthermore, the dialogue organizers believe that the dialogue results will benefit other objectives, such as cultural revitalization projects carried out by communities, NGOs, and others. Participants in the dialogue included scientists, governments, representatives of Indigenous Peoples and local communities, international organizations and non-governmental organizations (NGOs) from all continents of the world.



Photo: Marie Kvarnström

¹¹ See for example <http://www.ecosystemassessments.net/>

¹² See <http://www.icsu.org/what-we-do/interdisciplinary-bodies/pecs/>

Why is this a dialogue?

Throughout this project and during the workshop we keep coming back to the word “dialogue” – dialogue between diverse cultures, knowledge holders and actors. With dialogue the organisers of this workshop mean an approach which assumes that many people have pieces of the answer and that together they can craft a suite of solutions, rather than assuming there is a single correct answer that fits all. It’s an approach where active listening is encouraged with the intention to understand each other’s viewpoints, find meaning and agreement, rather than listening to imposed positions, finding flaws and make counterarguments. It is about revealing assumptions for re-evaluation. Three distinctive features differentiate a dialogue from a discussion, when all three are present, a conversation is transformed into a dialogue.¹³

- » Equality and the absence of coercive influences
- » Listening with empathy
- » Bringing assumptions into the open

An environment where people feel comfortable to speak on equal terms is an important precondition for a dialogue. This was the reason why the organisers asked the indigenous community of Usdub¹⁴ to host the workshop on connecting diverse knowledge systems, which was also generously accepted.

The Dialogue Project on diverse knowledge systems started with an informal expert meeting with representatives of the IIFB, EU experts and scientists engaged in local and indigenous knowledge and IPBES in Jokkmokk, Sweden, June 21-22, 2011.¹⁵ That meeting identified a need among representatives from Indigenous Peoples and local communities for more information and time to discuss potentials, risks, and implications of policy processes such as the IPBES. The meeting also highlighted a need for an expanded workshop that would bring Indigenous Peoples together with scientists and policy-makers. Following the Jokkmokk meeting, the dialogue continued through the development of a background document by the project partners and other key experts. In March 2012, the document was submitted and accepted as an INF document within the IPBES process.¹⁶

Throughout this work, organizers and participants of the Dialogue Project draw on existing expertise and build capacity to mobilize existing knowledge and processes to generate new knowledge and understanding towards sustainable governance of ecosystems and biodiversity. In the dialogue processes, organizers and participants want to emphasize *connections, exchange, and cross-fertilization* between knowledge systems¹⁷ rather than integration of aspects of one knowledge system into another.

¹³ Yankelovich D. 1999. The Magic of Dialogue. Transforming Conflicts into Cooperation.

¹⁴ Guna Yala and Usdub is described in box 2 at page 14

¹⁵ Report from an informal expert meeting with representatives of the International Indigenous Forum on Biodiversity (IIFB), EU experts and scientists engaged in TK and IPBES. Jokkmokk June 21-22, 2011.

¹⁶ UNEP/IPBES.MI/2/INF/9 Knowledge for the twenty-first century: indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems

¹⁷ We will use terms denoting different kinds of knowledge, and what we may call knowledge systems, in this paper, such as indigenous knowledge, traditional knowledge, local knowledge, and scientific knowledge, with full realization that these terms are used and understood differently by different actors and groups and that there are no absolute distinctions between different kinds of knowledge.

The need for such a dialogue is expressed in several global science-policy initiatives such as the CBD and the IPBES.¹⁸ Ecosystem assessments to monitor conditions and trends of biodiversity and ecosystem services are one response to global environmental change from a science-based perspective. Given the rate and extent of environmental change and the complex interactions between social and ecological processes, it is recognized by most involved that we need to link information, knowledge and understanding existing in different contexts and in different cultures in order to enhance the general understanding of environmental change and dynamics, and to strengthen our capacity for governing ecosystems at all scales. In particular, indigenous, traditional, and local knowledge systems are brought forward as critical sources of understanding ecosystem dynamics, sustainable practices, and interdependencies between people and nature; sources that often have not informed science and high-level decision making on ecosystem management. Indigenous Peoples and local communities are rights-holders and need to be involved in processes assessing the state of ecosystems and the services they depend upon and cherish. Thus, the Dialogue Project addresses a demand for using existing resources to develop modalities of mobilizing diverse knowledge systems to benefit ecosystem assessments and knowledge generation, such as under the IPBES, and linked processes such as SGAs and PECS. There is also a need to find ways of building on diverse knowledge systems and finding synergies at regional and local scales and in bottom-up processes in, for example, initiatives for cultural revitalization or reaffirmation.

Despite being increasingly recognized as essential, the practice of connecting knowledge systems remains a significant challenge. This challenge is dual. Credible and rigorous approaches are required in science-based ecosystem assessments, such as the IPBES, for including and respecting knowledge in policy making processes. Thus, procedures for validating knowledge is needed, however at present, existing procedures marginalizes or eliminates knowledge that is generated outside scientific institutions and is not academically peer-reviewed. To be mutually beneficial and lead to insights that are legitimate and useful at multiple scales and for multiple users, the connections and exchange between science and indigenous or local knowledge systems needs to be done in ways that respect the rights and worldviews of all knowledge holders.

Aims and structure for the workshop

The aims of the Guna Yala dialogue workshop were as follows:

- » *To contribute to strengthened exchange and cross-fertilization between knowledge systems concerning ecosystems and human-nature relationships in an equal, legitimate, and transparent way.*
- » *To outline the context of connecting diverse knowledge systems, including indigenous knowledge, traditional knowledge, local knowledge and experiential knowledge as well as scientific knowledge with the final aim of contributing to ecosystem governance for a sustainable future. This includes exchange of views on:*
 - › *ideas and perspectives from science, policy, NGOs, and Indigenous Peoples and local communities to map and discuss the state of the art and challenges ahead related to connecting diverse knowledge systems.*

¹⁸ Report of the third ad hoc intergovernmental and multistakeholder meeting on an intergovernmental science-policy platform on biodiversity and ecosystem services, UNEP/IPBES/3/3 Annex 'Busan Outcome': paragraph 7d): Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems.

- › *relevant definitions*
- › *mechanisms for exchange including participatory approaches in knowledge generation, ecosystem assessment and science-policy processes*
- » *To contribute to novel approaches for inclusion of diverse knowledge systems into knowledge generation, ecosystem assessments and capacity building in knowledge related processes such as the IPBES.*

The workshop had five sessions, each with a specified aim and outcome (see table 1) derived from the workshop aims. Each session included a set of presentations, plenary questions and answers and break out working group discussions. All plenary sessions were simultaneously translated into English and Spanish. The working groups were organized to have a mix of nationalities, gender and organizational affiliations, to the extent possible. In response to a direct query, none of the participants expressed concern for being identified with specific quotes.

The structure of this report will follow the sessions, and give a summary of each presentation, as well as of questions and answers and group discussions. It ends with reflections from the workshop that was presented at the IPBES meeting in Panama City and an epilogue summarizing the outcome of the IPBES meeting with implications for diverse knowledge. We hope that the outcome of this dialogue will be useful in multiple contexts and enhance communication and understanding across scales and initiatives.

Session	Title	Expected outcome
I	Biological and Cultural Diversity and Diverse Knowledge Systems	Understanding and respecting diversity in human-nature inter-relationships and knowledge systems
II	Experiences of exchange between knowledge systems regarding ecosystem assessment, management, ecosystem functions, and ecosystem services	Insights about Indigenous knowledge systems, science, and understanding of key factors behind successful cases of exchange between knowledge systems.
III	Experiences of knowledge validation from diverse knowledge systems and barriers and bridges for adaptation and exchange.	Understanding of potentials and limitations of validation in diverse knowledge systems in assessments and other applications.
IV	Documenting, storing, sharing, and controlling access to and benefits from knowledge and information from different knowledge systems, including access to and benefits from scientific knowledge by Indigenous Peoples and local communities.	Understanding different options for exchange and protection of documented knowledge, including advantages and limitations, related to diverse knowledge systems and data storage systems.
V	Promoting diversity of knowledge as an underlying principle and cross-cutting approach in ecosystem assessments and the work of Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)	Opportunities identified for connecting across knowledge systems and provide positive synergies.

Table 1. The sessions of the dialogue workshop.

Summary of presentations and discussions

Opening session

Onel Masardule, Executive Director of the host organization FPCI, together with the chief of the community **Leodomiro Paredes** and the chief of the entire Comarca Guna Yala, **Saila Heriberto Gonzales**, welcomed participants to the workshop and to Usdub, Guna Yala (see Box 2). **Malia Nobrega**, Coordinator of the IIFB, presented the background information to the Dialogue Project and reviewed the aims of the workshop. On behalf of the IIFB, Malia thanked the Guna people for their welcome and hospitality and the funders of the workshop, Swedish International Development Cooperation Agency (Sida), the Ministry of Environment of Finland, the International Union for Conservation of Nature, the Gordon and Betty Moore Foundation, and the CBD Secretariat for supporting translation of the Seminar Background Document into Spanish. **Armando Sarazuar** from Organizacion Sotzil, Guatemala, carried out a traditional spiritual inauguration ceremony. **Maria Schultz** from the Resilience and Development Programme (SwedBio), thanked the team that worked very hard to make the workshop possible and emphasized the mutual responsibility of all to make it a success. Maria explained how the idea for a dialogue on knowledge exchange initially came from a discussion on the need for capacity building under IPBES, where it was recognized that while some developing countries lack sufficient resources and scientific expertise, the same countries can be rich in local, traditional and practitioners knowledge related to use of local biodiversity. She ended by introducing the four facilitators of the meeting: **Joji Cariño**, IIFB, **Marie Kvarnström**, NAPTEK/CBM, **Pernilla Malmer**, SwedBio/SRC, and **Onel Masardule**, FPCI.

The opening session was concluded with a round of presentations and expectations from all participants. The themes of learning and sharing were very widely reiterated. Many participants personally thanked the traditional authorities of the Guna community for hosting the meeting, and welcoming them to the community. There was a strong sentiment expressed that it was important for traditional knowledge to be recognised, preserved, and respected. There were hopes that this dialogue would allow space for some of the challenges of working among knowledge systems to be identified and overcome, because, it was noted, these challenges have not always been adequately addressed in the past. Some participants stated their hopes that this dialogue would lead to better outcomes in the upcoming meeting on establishing the IPBES, scheduled to take place April 16-21, 2012 in Panama City. There was also some expectation that this dialogue would support ongoing work, both at the local community level across the world, and in supporting the development and implementation of better policy nationally, and internationally.

The Gunas and their land, Guna Yala

Guna Yala, the land of the Guna Indigenous People, where the dialogue workshop was held, is unique in many ways. It is an Autonomous Indigenous District for the Gunas, as the Panamanian Government recognizes the right of the Guna people to their Guna land, as well as their traditional culture. Guna Yala is one of five indigenous districts in Panama. It is situated in the northeast of Panama and covers 375 km in the archipelago Mulatas. Reaching the territory of the Gunas, and the Usdub Community, could be done either by flight, by sea with 12 hours journey from Colon City or by travelling by road from Panama City by the coast to Gardi, and from there by boat to Usdub. This takes 5 to 10 hours depending on the weather. The typical landscape of Guna Yala is an extended tropical forest that descends from the Cordillera de Guna Yala to the shores of the Caribbean, followed by a narrow strip of flat land with agricultural areas. This provides a mix of ecosystems in various stages of regeneration. Closer to the sea, the landscape is covered with coconut cultivation and mangrove forests.¹⁹ The Guna villages and communities however are generally situated on islands nearby the coast, where the climate is fresh and the richness of the sea complements the sources from the forest and agriculture.

Guna Yala maintains a rich traditional cultural heritage. There is a richness of indigenous knowledge and spirituality that builds on the respect for nature and sustainable use of resources. The songs and prayers of the Guna people are full of references to the environment and its protection. The governing bodies of the Guna Yala are the General Congress of Guna Culture, the General Guna Congress, the Saila Dummagan, the local Congress and the Sailagan. The economy of the Guna community is strongly influenced by living on islands. The three main activities beyond subsistence economy are the coconut production, shellfish fishery and tourism. Their catch—moderate quantities of fish, shellfish, mollusks and crustaceans—is delivered to local markets. The Gunas depend on the coastal ecosystems for most of their animal protein needs.²⁰

The Guna people have however spent less than 100 years on the coast. They have applied the knowledge acquired on dry land to the coastal and marine areas. This can be seen in their resource management practices, and in the institutions that comprise the Guna Yala. They have also gained new knowledge from their daily human-sea relations, which have enabled them to make a much more profound analysis of the sea and its systems. Most of the existing traditional fisheries practices in the Guna Yala District are based on the Guna dryland cosmology or worldview; their fishing practices are derived from those undertaken in the rivers. Before they migrated to the coast, the Gunas lived along the large rivers of Panama and Colombia. From the 17th century, they began to be gradually displaced from these rivers and their tributaries to the coast and from there to the islands where they currently live. This migratory process was gradual, and it was not until the mid-19th century that they had migrated completely.

¹⁹ Ventocilla et al. 1997

²⁰ Andreve. J. 2009. Samudra Report No 54, page 28 – 30.

During the final day of the dialogue workshop the participants visited together with people from Usdub Community the Guna traditional agro-forestry systems upstream the river, and learned about the sacred sites, with a richness of biodiversity and wildlife along with cultivated plants.

The Foundation for the Promotion of Indigenous Knowledge (FPCI), the hosts of the workshop, is an indigenous organization that contributes to the recovery, strengthening and promotion of indigenous knowledge related to the environment and indigenous rights. With the participation of youth, women and members of the organization, it aims to prevent loss and theft of ecological knowledge, lands and territories, and thereby reduce the deteriorating cultural, socioeconomic and environmental quality of Indigenous Peoples. FPCI has maintained a close relationship with communities and local and regional authorities since its foundation in 2000, advising, training and developing projects on environmental issues, human rights, strengthening the livelihoods and work of youth, women and leaders. The Gunas and FPCI have also over time gained attention and respect for their contribution to international processes of importance for indigenous issues, such as CBD and UNFCCC.

Session I

Biological and cultural diversity and diverse knowledge systems

The aim of the first session was to outline what diverse knowledge systems are, and how we may develop understanding and respect for diversity in human-nature inter-relationships and knowledge systems.

Yvonne Vizina from the Métis National Council in Canada gave her perspectives on diverse knowledge systems. She presented a successful model for knowledge organization of the Canadian Association of Research Libraries, which is based on diversity of ways of knowing and of knowledge systems. Yvonne emphasized the critical role of Aboriginal perspectives and knowledge systems within education systems and gave examples on how this is being done in public and post-secondary educational systems in Saskatchewan, including a holistic Métis knowledge system for lifelong learning; and exemplary collaboration among First Nations, Métis and Inuit peoples comprising the National Aboriginal Council on Species at Risk (NACOSAR) as legislated by the Government of Canada. Diverse knowledge systems exist all around us and are anchored in cultural, linguistic and disciplinary communities. Literary definitions are varied and rooted in particular cultural worldviews. Yvonne emphasized that thinking from only one perspective limits the evolution of knowledge. Métis People believe the following themes are some of the areas required for a balanced worldview: self, people, land, language and tradition, economics, politics, environment, and human health. Yvonne further shared four dimensions of a holistic worldview: the physical, the spiritual, the emotional and the intellectual. In science education there is an over-reliance on the physical and intellectual realms. Spiritual and emotional realms are left out, resulting in an absence

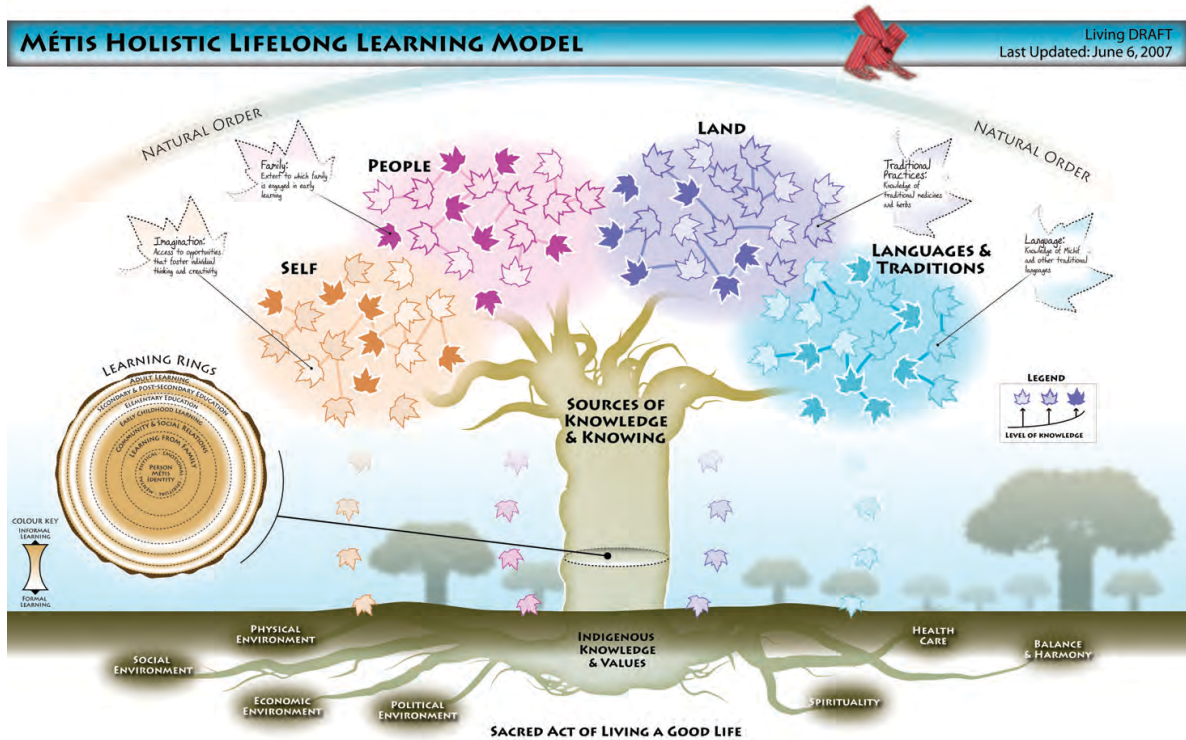


Figure 1. The Métis holistic lifelong learning model as presented by Yvonne Vizina (http://www.ccl-cca.ca/pdfs/RedefiningSuccess/CCL_Learning_Model_MET.pdf)

of discussion about belief systems, ethics and values. In Canada, many youth disconnect from science training. Yvonne concluded by emphasizing the critical role of Aboriginal perspectives and knowledge systems within education systems and gave examples on how this is being done in Saskatchewan, Canada.

Douglas Nakashima from UNESCO began his presentation with an overview of historical interactions between knowledge systems and showed that the dialogue between science and indigenous knowledge systems has gone on uninterrupted since the very first days of science. Thus, the issue is not so much whether the dialogue takes place, but the conditions of the interaction: Who sets the goals? Who decides on rules of the game? Who benefits from the outcomes? Over the last four decades, indigenous knowledge has made invaluable contributions to the innovation of biodiversity and ecosystem management, food production, advances in health care, natural disaster preparedness, assessing and mitigating impacts etc. Using indigenous fire management as an example, Douglas showed how, on innumerable occasions, scientific interpretations of ecological processes have proven erroneous or inadequate, while indigenous approaches (e.g. traditional firestick management) have demonstrated their validity. He further argued that despite this documented legacy, societal attitudes within science have remained largely the same. In the eyes of scientists, decision-makers and the public, indigenous knowledge continues to flirt with the irrational, superstitious and anecdotal. In this view, indigenous knowledge can only come into society's good graces through scientific validation. Science remains the gatekeeper of knowledge, supported by an array of educational, political and economic institutions. Douglas emphasized the need for science to reflect on itself as a cultural practice. Given this history of inertia, is there an opportunity for more equitable relationships in the framework of IPBES? Can the scientific community recognize the ethnocentricity of its own worldview, its cultural constructs, and the weaknesses that are part and parcel of its strengths? Douglas promoted co-production

of knowledge as a way forward, which would include joint indigenous-scientific formulation of novel research questions, collaborative methods for data gathering, flexible arrangements for interaction, complementary data sets, and mutual respect for approaches, worldviews and epistemologies. Requirements to achieve this goal include: accepting local and indigenous knowledge on its own terms; abandoning ethnocentric processes such as scientific validation; a focus on process rather than facts; and the search for modalities that bring scientists and Indigenous Peoples together on equitable terms.

Questions and answers, session I

In the questions and comments from the floor following the morning presentations several participants emphasised that it is important not to overlook the positive elements of science, and acknowledge the diversity within both science and traditional knowledge, as knowledge is always dynamic. It was also noted that there are scientists who promote traditional knowledge, and there was a need to be careful about how we talk about science and traditional knowledge so as not to polarise the debate. The comments went on to highlight the importance of considering the differences between formal and informal education in passing on understanding of indigenous worldviews. One participant stated that there was a need to acknowledge that power relationships are embedded in knowledge and information, which exist because of the history of colonialism. These inequalities in power cannot be ignored, and need to be discussed before finding bridges between knowledge systems. The final comment from the floor suggested that it might be important to add practitioner knowledge to our conversation, as in many European countries there are few indigenous, but there are practice-based knowledges that are also important to recognise. In her response, Yvonne acknowledged that it is important to be cautious with generalizations when discussing the nexus of indigenous traditional knowledges and science, as this can contribute to misunderstandings or defensive reactions. Douglas urged scientists to be reflexive about their position and academic training, and be aware of the institutional norms of science. He further emphasized the importance to distinguish between the institution of science and the individual scientists.



Photo: Pernilla Malmer

Session II

Experiences of exchange between knowledge systems regarding ecosystem assessment, management, ecosystem functions, and ecosystem services

The expected outcomes from the second sessions included further insights about local and indigenous knowledge systems, science, and understanding key factors behind successful cases of exchange among knowledge systems.

Jorge Andreve, FPCI, Panama is working on a project to create a tool for Environmental, Cultural and Territorial Assessment based on experiences and observations in Guna Yala. The aim is to combine modern GIS technology with the knowledge and observations of Indigenous Peoples in the area. Cartography and mapping have limitations that don't take into account the cultural significance of places, the relevance of indigenous sites and the cultural and spiritual relationship that Indigenous Peoples develop with these places. This takes the "heart" out of the territory and leads to limited analyses and consequently to culturally inappropriate results. Guna Elders have a holistic understanding of their own territory because they have walked and sailed the territory, which many younger people don't know about. In this regard, traditional knowledge has been seen as a "cloud" that is only felt, not seen.

Assessments in this project are done using a participatory approach, where the time of the people is respected. Participants point out mistakes in the GIS analyses and/or provide guidance on places that should be covered. In this regard, when using GIS, cultural and spiritual areas can be detected, but for a real and valid analysis the areas have to be visited, and relationships between different parts of the territory must be understood through direct experiential learning. The tool created for this kind of Environmental, Cultural and Territorial Assessment (EACECTI) takes into account cartographic, ecological and other aspects, and bridges the gap between the academy and traditional knowledge. The synergistic method facilitates a more holistic analysis with an ecosystem approach, considering indigenous knowledge and the multiple factors in a location. Among the main results of the research conducted in Guna Yala so far are guidelines for territorial management.

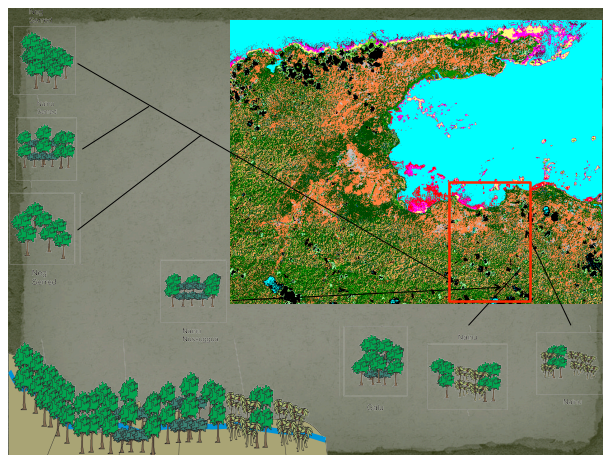


Figure 2. When using GIS, cultural and spiritual areas can be detected, but a comprehensive analysis requires a visit to the field together with the knowledge holders managing the landscape. From Jorge Andreve's presentation on Environmental, Cultural and Territorial Assessment in Guna Yala.

Alejandro Argumedo from the Asociación Andes used the Potato Park in Peru as an illustration of Indigenous Biocultural Heritage (IBCH) as a complex system of interdependent parts centered on the reciprocal relationship between Indigenous Peoples and their natural environment. Alejandro argued that the use of the concept of IBCH, which is based on an indigenous world view, has allowed the communities of the Potato Park to nurture transdisciplinary approaches that combine indigenous in-situ and conventional ex-situ methods and tools, enabling diverse inputs and dynamic collaboration across scales. Alejandro explained that for the Andean people, the concept of territory includes all the different stakeholders (political and spiritual) that constitute the space. This is represented in the *Ayllu*, which represents the reciprocal relations between people, wildlife (includes wind, rocks, cultivation areas, etc), and the sacred areas where natural law is derived from.

The potato park, which comprises 9000 Ha, was created around 2000 and includes six communities, which have united their territories for managing their resources in a cooperative manner. They can maintain their cultural vision and community concepts within the management, administrative and other spheres. More than 1500 varieties of potatoes have been gathered, resulting in increased biodiversity, creating resilience and fostering culture. A link across knowledge systems was established for conserving genetic diversity by the collaboration with the International Potato Centre. They introduced in vitro techniques that guarantee the well-being and survival of the potatoes which will be stored in Svalbard Global Seed Vault, a global back up storage facility for crop diversity. Further, microeconomic processes have been created for the development of potato-based products. In this regard, traditional knowledge along with science can generate benefits to the community.

Gathuru Mburu from the African Biodiversity Network (ABN) started out by saying that spirituality is important to many Indigenous Peoples and local communities, and it is an arena that has not had much interaction with science. Scientists reach a point where they say it is magic, and dismiss it. Mburu explained that spirituality offers knowledge of something beyond the human, and it gives order to the world. The African Biodiversity Network works with communities that have spiritual knowledge which has been passed on from their ancestors, in particular to custodians who are intermediaries between the natural and the supernatural worlds. ABN is working with communities to bring back indigenous knowledge in a holistic way, embracing a deep connectedness between humans and nature. This spirituality can help add to the resilience of communities, and this is still relevant today. Mburu argued that science works with parts of these issues but there are limits to the scientific approach.

The work of the ABN, which is active across the African continent, was inspired by a learning exchange with indigenous communities from the Colombian Amazon. ABN has also initiated learning exchanges between communities in Africa. The strategy used is elder-led, and also inter-generational, to encourage learning between youth and elders. For example, elders identified protection and rehabilitation of sacred sites as a priority, together with revival of the related practices. The respect for sacred ecosystems makes these potent enough so that they can protect themselves, as they protect us as human beings. Mburu further argued that in order for communities to become resilient e.g. against climate change, we need to consider culture together with ecosystems. Resilience requires access to traditional knowledge, spirituality, and territory. Rituals are an important part of building community resilience and ecosystem resilience, performed to i.e. strengthen sacred sites, and return the potency of the sites. Mburu used the Kivaa Hill, a sacred site in Eastern Province of Kenya as an example. Here, the rituals were reinstalled after 40 years, and the site was rehabilitated. The project aimed to strengthen customary laws, including the stories, and revitalize the traditional cosmologies of the community. The main challenges of working for communities in this way are resistance from mainstream faiths, the slow

pace of adoption by young people, and delays in conducting the rituals due to the changed lifestyles of elders who have the knowledge, but are not performing the rituals.

Questions and answers, session II

The question following the presentations illustrated that the role of spirituality for knowledge and management of biodiversity and ecosystems is highlighted by many traditional knowledge holders while at the same time presenting a challenge for some scientists and government representatives. When sacred sites were described as a social issue, several participants argued that in a holistic perspective, nature has agency in itself that needs to be respected, nature has its own force and we have obligations to it. One participant raised a concern that focusing on the spirituality and rituals one may fail to look into other options to e.g. respond to climate change. Mburu responded with a saying from the ancestors: “pray to God, but you must also tether your donkey”. You need to also do your part. He further argued that we need to employ other sources that can add to the insights offered by science. Other comments concerned the role of authorities acting within the communities and with outside actors in the case studies presented.

Summary of group discussions session I and II

There were rich discussions in groups both in the morning and the afternoon. To guide the group discussions in the morning the facilitators asked the participants to first silently think about a place that was important to them, then to reflect on how they know this place, and where that knowledge came from. The participants could choose to share this reflection if they wished. After this the groups were asked to identify important principles for respecting diversity in human-nature relationships. In the afternoon the groups were asked to share positive examples of exchange between knowledge systems, and to identify factors that were key to the success of these examples.

Some common themes were expressed but there was also a rich variety in the discussions. The importance of respect came up again and again, some groups emphasised respect in relation to approaching exchange between knowledge systems, and some conversations emphasised the need to respect all things as part of fostering a good relationship with nature. The importance of a holistic understanding of nature came up in many of the group discussions. This holistic understanding was articulated as being inseparable from spirituality by some of the participants. The importance of rituals for passing on traditional knowledge and maintaining sacred sites was highlighted in some discussions. Many different ways of learning were touched upon. One group focused on community land-based learning. Another group felt that there was a need for formal education to include traditional knowledge. In describing their personal relationships to a place, participants articulated many different ways to learn about a place including learning from: family, elders, stories, rituals, deities, local people, direct conversation with nature, books, and direct experience. The strong emotional connection to these places was very clear in some of the accounts offered by participants. Some groups discussed the fact that different ways of knowing utilize different senses, and the importance of all of the senses should not be overlooked.

Recognition of the importance of place-based knowledge was apparent in the discussions. The importance of the connection between territory and traditional knowledge was articulated by many of the indigenous participants, who also felt that traditional governance of territory and recognition of indigenous institutions was of critical importance. One group recommended that each community should have an ethical code of conduct as a framework for respecting their knowledge, and another group suggested that a mediator or regulator could be identified to explain the rules of

a place and ensure that these rules are respected. It was widely felt that learning about places and cultures was a long and slow process, and some believed that this was a lifelong process. It was recognized that for exchange among knowledge systems to be successful there is a need for long-term commitments to ongoing dialogue in order to build trust, to ensure that research outcomes are shared with communities, and to allow understandings of different worldviews to develop. More than one group felt that there was a need for humility and modesty, and that it is necessary to recognize the limits of one's own knowledge. One group proposed that the Quechua word "Ichachu" meaning "may be, perhaps, could be" could provide a principle for guiding relations between different cultures, emphasising the need to leave open the possibility of learning elements or aspects of other knowledge systems not generated by your own community. The importance of indigenous languages for transmitting traditional knowledges and worldviews was discussed in several groups. One group identified the use of native language by indigenous teachers as one element that leads to successful exchanges of knowledge. Some groups also expressed the need to develop common languages in order to have conversations among people from different knowledge systems. Another group connected this back to research, and in particular the need to give enough time to hear long stories, and complete histories since you can lose important meanings when you re-phrase or synthesize other people's ideas. In this regard, it is also important that community-based participants in research are given space to speak for themselves.

One group felt there is a need to distinguish between different types of knowledge exchange. For example, knowledge exchange between Indigenous People and non-Indigenous People can be quite different from exchanges between different indigenous communities. There were successful examples of both of these types of exchange in the group discussions. One example demonstrated that horizontal sharing between indigenous communities had played an important role in maintaining traditional knowledge. In other groups there were examples where sharing between knowledge systems had been mutually beneficial.

Some key factors identified in successful projects were finding the right teachers, respecting customary practices, ensuring the community could access the research in an understandable format, and including the elders and youth of a community.



Photo Fotógrafos sin fronteras, Usdub

Session III

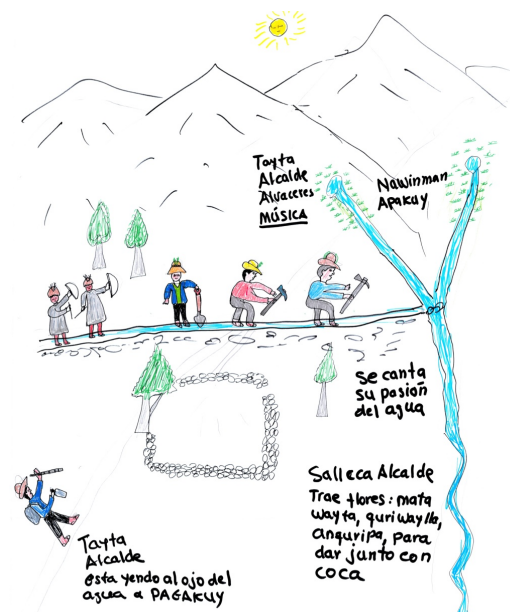
Experiences of knowledge validation from diverse knowledge systems and barriers and bridges for adaptation and exchange

The expected outcome of the third session was enhanced understanding of potentials and limitations of validation in diverse knowledge systems, in ecosystem assessments and other applications.

Magdalena Machaca Mendieta from the Asociación Bartolomé Aripaylla /PRATEC described knowledge, secrets and practices of harnessing water, biodiversity and ecosystems for good life in Quispillaccta-Chuschi, in the Ayacucho area of the Peruvian Andes. In 1970s and 80s with the green revolution, agricultural practices in this area changed. People started to use fertilisers and chemicals and practice monoculture. Also, mechanization of agriculture on their fields (chacras) broke the traditional practices of crop rotation and fallows for reducing crop plagues and maintaining soil fertility. Previous practices and traditional knowledge were abandoned, and the farmers harvested less diverse crops.

The new way of farming led to a significant loss of biodiversity. The farmers were losing their heart, their vision and their care for the natural environment. The resulting cultural degradation was made worse because of political violence in the area, including persecution of the yachaq or spiritual leaders.

The community has now two decades of working towards recovering their harmony with nature. Due to the changed farming practices, communities had problems with fungi, rats, toxic plants and other destructive forces. People saw that they had lost harmony with nature, and they saw that they had to start carrying out the lost rituals for recovering their sacred places, because in the process of change, the Water and other Elements of Nature were offended by the attitude of people towards them. This work has been nurtured by Asociación Bartolomé Aripaylla (ABA). The rituals led to the return of respect and to an increase in the diversity and variability of seeds. The communities have returned to their earlier traditional use of the agricultural calendar, which is also related to the celebrations in the community. Children and youth used to have important roles, for example, in the construction of landscapes, and today these roles of women and children are revitalized. There is, for example, a children's festival of water (Yarqa Aspiy), in which children sing and dance their "passion" for water. Other traditional practices which have been revived include the use of fire to mitigate extreme events in nature such as hail storms, and calling the rain and loading the rain, which are carried out by people with cosmic strength. Another tradition is the



cultivation in layers, terraces and in scattered small plots to increase food security, as different layers and places may escape from natural events such as frost or hail, which can destroy the crops. The communities have started harvesting rainwater through the creation of natural ponds, which they can easily modify and vary in capacity from 50 m³ – 80 000 m³ of water. The ponds purposefully filter water into the groundwater layer moving down to the chacras (fields) where there are water springs. Until now, the communities in and around Quisillaccta have constructed 64 rainwater ponds containing 8 million m³ of water.

The new wellbeing of the community has been generating more income for them, as well as re-establishing their relationship with their land. To conclude, Magdalena observed that it seems so far that the experts educated in the Western knowledge system, while more appreciative of the results of applying the indigenous knowledge system still fail to recognise its validity and its deeper spiritual implications.

Jorge Ishizawa complemented Magdalena's presentation with a reflection related to different aspects of validation, and its role in affirming the legitimacy of knowledge. There are various ways and means of achieving the social legitimacy of knowledge and hence its validation.

- » Empirical validation – “if it works, it's good!”
- » Technical validation – if you use the right apparatuses, the experiment yields truth.
- » Procedural validation: if you comply with the protocols it is validated, because the procedure has been previously tried and has worked, and thus has been validated.
- » Cultural validation: if the knowledge is in accordance with the worldview. It is part of a way of life, of a way of being. It conforms to custom.
- » Moral validation: has to do with why things are done, instead of how and with what.

Empirical validation is often used in the domain of technology. Scientific experimental knowledge relies on technical and procedural validation. Traditional knowledge is practical knowledge and thus empirical validation is all important while technical and procedural validation do not appear to be exercised. What is central here is cultural and moral validation.

Validation of knowledge implies the existence of an epistemic community. Who belongs is a central question. Modern science has reduced the prerequisites to the competent management of apparatuses and protocols. Competence recognised by the scientific community defines validity. The ethical or moral question is outside its purview. The implicit assumption is that the pursuit of knowledge is a virtuous activity in itself and its fruits are good in consequence.

Maria Tengö from the Stockholm Resilience Centre set out to provide some perspective of how local and indigenous knowledge was used within the Millenium Ecosystem Assessment (MA), an international UN-driven scientific assessment of the state of the world's ecosystem that ran 2000-2005²¹ and that will form the basis for many aspects of IPBES. The particular focus was on validation and the mechanisms used for integration of diverse knowledge systems into the MA. Maria explained how validation is essential for scientific assessments to be credible, legitimate, and useful for decision making. However, critical issues include: whose perception of what is valid knowledge, who's knowledge counts in which context, and who influences what

²¹ MA 2005, www.maweb.org

defines legitimate validation processes. Within the MA, science-based mechanisms were used to include local, indigenous, and practitioners knowledge. However, this was done to a limited extent and the outcomes informed mainly local or sub-regional assessments, and were not scaled up to global or regional levels. Maria presented dual based evidence as a proposed approach within IPBES for addressing the potential complementarities of diverse knowledge systems.²² In dual based evidence, different knowledge systems are viewed as generating equally valid evidence for interpreting ecosystem change, trajectories and causal relationships in interlinked systems of humans and nature, using different criteria of validation for data and information originating from different knowledge systems. To conclude, Maria introduced the initiative Program on Ecosystem Change and Society (PECS), a recently launched research programme sponsored by the International Council for Science (ICSU)²³ and UNESCO and hosted by the Stockholm Resilience Centre. The initiative is relevant to this discussion as it will provide theories and methodologies for enhancing exchange between knowledge systems, based on resilience thinking and a social-ecological systems approach. The PECS programme focuses on people's connection to the biosphere and place-based studies, addressing how stewardship of ecosystem services is shaped by the dynamic interplay between the global and the local, past, present and future.²⁴

Joji Cariño from IIFB provided a presentation concerning the monitoring of traditional knowledge in the CBD. Indicators are an important part of policy frameworks for setting goals and targets, as necessary components for monitoring successes or failures of policies within the framework. Indicators are agreed through political processes and so it is essential that Indigenous Peoples have a voice in these processes, as full and effective participants. Indicators must be sensitive to scale, and data generated and aggregated for macro level monitoring of trends must also provide information that is useful at a micro level. Joji described how, starting from the process of developing the earlier 2010 biodiversity targets of the CBD, Indigenous Peoples have proposed indicators to monitor the state of traditional knowledge. The Aichi Biodiversity Targets, adopted in 2010, have indicators for traditional knowledge that include linguistic diversity, changes in land use and land tenure and practice of traditional occupations, as well as the degree to which respect for traditional knowledge, innovations and practices and customary sustainable use are integrated in the implementation of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets.

The IIFB working group on indicators contributes to a global view grounded in concrete research at all levels. Members within the network work towards their own needs by monitoring trends that are useful at the local community level, but these also work towards informing international goals mirrored in CBD indicators, MDG indicators, human rights indicators, national indicators, and local indicators. IIFB members have run a pilot testing of traditional knowledge indicators in the Philippines since 2008 to discuss communities' views and use of the indicators, which also involves participatory community mapping. This has so far resulted in the addition of indicators on customary governance, on policy and on poverty and well being, as well as the call to include indigenous ethnicity identifier based on self-classification in the Philippines national census survey.

²² Report of an international science workshop on assessments for an intergovernmental science-policy platform on biodiversity and ecosystem services, held in Tokyo from 25 to 29 July 2011 UNEP/IPBES.MI/1/INF/12

²³ International Council for Science (<http://www.icsu.org/>)

²⁴ Chapin et al. 2010, Carpenter et al 2012, see also <http://www.stockholmresilience.org/research/researchprogrammes/pecs>

In order for an indicator to be adopted there has to be political validation at multiple levels: Parties need to accept the validity of the indicator, and there has to be community acceptance of its value. Indigenous Peoples engagement with these policy processes requires a level of inter-cultural understanding of both community needs as well as those of policy makers.

Questions and answers, session III

The following discussions had two main themes, one on validation mechanisms and their legitimacy, and the other on the role of youth and education, following Magdalena's presentation. The robustness of the peer-review process of scientific journals was discussed. It was stated that it has fallacies, and processes such as the IPCC or IPBES have additional peer-review requirements. One issue is that falsified hypotheses rarely get published, and it can be a challenge to publish novel research, for example trans-disciplinary studies, if it does not fit into the journal categories. Maria Tengö argued that for issues on e.g. human-nature-spiritual relationships and sustainable governance of ecosystems, we do not yet have the science that can be used to adequately understand and analyse them. That does not imply they are not relevant.

The issue of who are the experts that can peer-review or validate local or indigenous knowledge was raised. Several persons argued that validation cannot be carried out across epistemologies. A shaman network in Colombia had trouble deciding who should be accepted as a shaman, as this was culture specific. How can we strengthen the ability within each community to address validation issues? The question of what is really the line between science and traditional knowledge was also raised. There are corresponding validation procedures, sanctions, and resolutions within traditional knowledge but it is not accepted in the same way. It was also declared that it can be a personal challenge to follow the validation demands of science. There were also calls from the floor for greater acknowledgement of the complementarities between knowledge systems.

Several people were engaged in the role of youth in reviving knowledge and traditions, and the influence of educational systems that leads to erosion and loss of knowledge. Magdalena explained that they had a struggle with the schools after bringing back the role of children in the system, but when we teach our children traditional knowledge they do better at school. Joji concluded by commenting on the additiveness of culture, saying that she does not see herself as less Ibaloi²⁵ because she is university-educated. We need to be intercultural and not be afraid of differences.

Summary of group discussions, session III

The session III discussion started with participants sharing experiences of validation in different knowledge systems, as well as opinions and ideas on suitable validation mechanism in a context where knowledge is co-produced among multiple knowledge systems, including science. There was strong belief in most groups that validation of diverse knowledge systems, where one knowledge system applies its validation methods to another system, can compromise the integrity and complexity of the knowledge systems, and may not be desirable. It was argued that diverse knowledge systems have their own validation mechanisms and it is inappropriate for them to be externally validated through foreign mechanisms. In this regard, local, traditional and indigenous knowledge systems have their own systems for validation. Several groups also had examples where validation had been working well between knowledge systems, for example: soil classifications in Thailand, pest control practices in the

²⁵ An indigenous tribe in the Philippines

Philippines, seed diversity in Ethiopia and Peru, and disease control and cure in Kenya. It was also argued that under certain conditions, validation can lead to mutual learning and win-win situations with benefits to Indigenous Peoples and local communities as well as science.

Examples of validation mechanisms within knowledge systems involve working with the knowledge itself, for example, through learning by doing, testing over time, recognition within a group, validation by deities, as well as the recognition of a knowledge holder as an expert which may include the training of experts with knowledge tests and graduations, recognition by a master, or being selected by deities. It was concluded by more than one group that validation within a knowledge system is rarely a problem – the challenge concerns validation between knowledge systems. The following specific concerns with scientific validation of diverse knowledge systems were raised:

- » Snapshots in time of a dynamic and fluid system;
- » Failure to recognize the system as a whole entity;
- » Indigenous and local systems are often oral, or embedded in songs, dances, hunting and gathering or farming practices (tacit knowledge); and
- » Spiritual knowledge or revelations cannot be validated.

In spite of these challenges, some participants in the dialogue workshop believe that to influence other institutions, ways to validate traditional knowledge according to criteria recognized by external institutions are needed. On this issue, there were debates and disagreements among the small working groups. The following recommendations for validation mechanism or process emerged in the discussions:

- » Separate mechanisms should be used for different knowledge systems. The dual based evidence approach, as presented by Maria Tengö, was discussed by some groups as a potential framework, or a starting point to map discrepancies and disagreements for further co-production of knowledge.
- » A process of understanding and learning should be used that is open rather than a standard set by one side.
- » Validation should be aligned with the system of learning. For example, systemic validation mechanisms for a systems-based knowledge system.
- » Different kinds of validation could be recognized as e.g. empirical, procedural, cultural (collective) validation, and moral or ethical validation (see summary of presentation by Jorge Ishizawa).
- » Recognize the full system. However, it was also noted that it is easier for scientists and local communities to collaborate in more narrow contexts, rather than on the level of Indigenous Peoples worldviews.
- » Social science mechanisms may be useful, but also do not have the same status with decision making as natural science.
- » Secure respect and room for all parties and a bidirectional commitment to sharing knowledge.

It was concluded that we may need to use a different concept than validation, which is implicitly unidirectional, and that too much focus on validation may lead us in wrong directions. Functioning knowledge systems need to be acknowledged, along with the recognition that it is not always necessary, or possible, to understand them. However there remains a need to create policies that can secure the continuation or strengthening of these systems.

Session IV

Documenting, storing, sharing, and controlling access to and benefits from knowledge and information from different knowledge systems, including access to and benefits from scientific knowledge by Indigenous Peoples and local communities

The expected outcome of the session was to understand the different options involved in exchange and protection of documented knowledge, including advantages and limitations, related to diverse knowledge systems and data storage systems.

Preston Hardison from the Tulalip Tribe, USA, covered four interrelated dimensions of the relationships of Indigenous Peoples and scientists that should be addressed to develop equitable and respectful partnerships. The first is the Secret/Sacred Dimensions, including customary laws, cultural norms, and languages. Even though there is a culture of sharing and reciprocity within the Tulalip Tribe, there are also complex rules for how knowledge is circulated in the society and to whom. Knowledge is not always shared, and there are distinctions among different types of knowledge. Preston asserted that shared knowledge should always carry an obligation of how it can be used. The second dimension concerns the Western legal dimensions of knowledge sharing, which falls under the dominance of the Intellectual Property Paradigm as a part of domestic and international law. The good intentions between any particular indigenous knowledge holders and scientists are not governed by the customary laws, beliefs and practices of the communities or peoples, but by laws of copyrights, patents, trademarks, trade secrets, geographic indications and so on. Preston claimed increased recognition of customary law as the basis for governing indigenous and traditional knowledge. Further, the third dimension concerns governance and the politics of collective rights, indigenous self-determination, and the politics of co-management. Indigenous knowledge is often inextricably linked to the land and resources to which this is related, and thus inalienable from issues of rights to hold and govern both the knowledge and the related resources. Lastly, the fourth dimension concerns the strategic sharing of knowledge. Preston argued that knowledge sharing should always be preceded by a risk assessment. Knowledge sharing risk assessments should take into account issues such as the risk of undermining traditional values, beliefs and practices; the risk of exploitation and loss of control by knowledge holders; and risks of unauthorized disclosure of knowledge associated with different kinds of resources.

Participatory plant breeding is a strategy that bridges knowledge systems in integrating farmers' and scientists' practices and knowledge in crop variety development.

Regassa Feyissa, from Ethio Organic Seed Action (EOSA) in Ethiopia, explained how successful plant breeding projects need to recognize farmers as breeders and empirical and scientific practices and knowledge on equal footing. He explained how local farmers in Ethiopia prefer to develop a multitude of different varieties or polygenic forms that fit to a range of specific agro-ecological conditions and practice a diversity-based agriculture. In doing so, they carry out conservation-through-use and actively maintain the gene pool close to the residence while adapting type of seeds

according to the location and suitability further from the homestead. Scientists have begun to realize that the use of single varieties and the development of varieties for profit are at odds with the interest of diversity based and marginal farming conditions. Further, they are also recognizing that there is much to learn from farmers even concerning increasing production. However, formal and informal breeding operate side by side but with little or no interaction. There is also a concern that with advent of modernization and centralization of variety development and seed supply systems the contribution of traditional practices and knowledge is disrupted. Regassa concluded that both perspectives are important in agricultural development, and that an integrated approach bringing together scientists' and farmers' knowledge in participatory variety-development strategies is key to maintain and develop locally adapted genetic resources, particularly under emerging situations where environmental conditions change. However, in this process it is necessary to observe property rights issues, and to secure access and benefit sharing.

Xue Dayuan, from the College of Life and Environmental Science, Minzu University of China, presented an approach for how China has responded to the need to manage and protect traditional knowledge, to link it to modern scientific and patent literature, and to increase international recognition. It is an extensive program of classifying, documenting, and building a database of traditional knowledge. Dayuan described the rich context of traditional knowledge in China and how traditional knowledge is classified into five categories, according to their attributes and usages, including knowledge of traditional agricultural genetic resources, traditional medicines, traditional technologies and cultivation modes and lifestyles, knowledge of traditional cultures reflecting biodiversity conservation and sustainable use of bio-resources, and knowledge of geographical and biological indicators. He further explained the design and functions of the database, with categories further sorted into subcategories based on a series of vocabulary entries. It is a large database of information, searchable by persons with access, and will be extremely useful in research and industries. It will also promote benefit-sharing of traditional knowledge, especially for Indigenous Peoples and local communities, prevent bio-piracy and enhance protection of traditional knowledge for the benefit of all human beings. Traditional knowledge protection has been more or less mainstreamed in Chinese national policies.

Myrle Ballard from Native Women's Association of Canada opened her talk by commenting that she found it challenging to present her ideas in the way required by the academic world, as the convention of having to support all assertions through referencing published texts worked to support only already published information. This embeds assumptions about what is considered to be valid knowledge, and consolidates power in the western academy. Also knowledge is constantly evolving; so once something has been published how can the community go back to revalidate the knowledge in the future? The concern is that when research is conducted on issues related to Indigenous Peoples or their traditional knowledge by a western scientist, science too often does not recognise the constant evolution of knowledge. Some scientists continue to assert their findings from other knowledge systems even though events and issues have changed in these systems. Indigenous Peoples view their knowledge as being comprised of the changes that are taking place around them. Myrle also explained that language plays an important role in Indigenous Peoples knowledge. She presented her research on language as a key part of knowledge systems, and the transmission of culture, and how that embeds ways of knowing the natural world. She also stated that women play a vital role in educating the next generation in indigenous languages, but their contributions are rarely fully recognized. Indigenous languages are storehouses of vast amounts of ecological knowledge. Myrle used the Anishinaabe word 'njinay' as an example of how behaviour is guided by language and its role in communicating a worldview. The word 'njinay' is a method of regulating behaviour; it is a word that is used to encourage people to

respect plants, animals and other people, and can be used to scold people, and it is used in a similar way to karma. Myrle further outlined how government policies and new technologies had negatively impacted on traditional knowledge over time using a customary clock diagram. The customary clock describes how policies and events have impacted the Anishinaabe sustainable livelihoods, and demonstrates how Anishinaabe knowledge and western knowledge have contributed to changing the livelihoods of the Anishinaabe.

Questions and answers, session IV

Several comments following the presentations emphasised the role of women and gender in the issue of knowledge and maintaining knowledge systems. There was also great interest in the Chinese national database, and the implications of the insights from Preston's presentation for the design of such databases. Who owns the data? How can the benefits for the people be ensured? How can information be disclosed? Dayuan explained that even if the source community of knowledge is registered in the database, there are challenges involved in allocating the benefits, as for example some knowledge was published a long time ago so it is hard to determine which ethnic groups are the owner. The discussion on how to best do this is ongoing, but it will involve two contracts, one between the research institution and a company, and one between the research institution and the local community. Preston further commented that databases may be useful to secure benefit sharing but that there are also issues involved. Patents do not stop use, they only stop other patents, and protection against commercial use or uses that are against customary law may for example also be needed. One way may be to just reveal a certain amount of knowledge in the database, and then to get more information you need to contact the right tribe etc. In Nagoya, what was not achieved was how to deal with non-citizens, such as Indigenous Peoples that have collective rights, and state-level agreements. Preston concluded with arguing for the idea that customary law should follow the knowledge.

Summary of group discussions session IV

The different groups discussed experiences and insights concerning documenting, storing, sharing and controlling access and benefit from knowledge and information from different knowledge systems, including aspects of what can and cannot be shared. It was clear from the discussion that this question covers a number of issues, from internal concerns to document knowledge to prevent losses, over openness to share knowledge for the benefit of the planet, to caution for misrepresentation of key aspects of knowledge, as well as misuse of knowledge. Some workshop participants were quite open towards documenting knowledge for sharing and saw limited problems, others were much more cautious. A critical issue that was pointed out was the risk of third party transfer, what happens when knowledge is spread beyond an agreement between parties? It was argued that risk assessments of sharing knowledge should always be carried out, and that knowledge holders should be encouraged and supported in performing such assessments. Intellectual property rights may not be sufficient to protect knowledge. Free, Prior and Informed Consent was emphasized as a baseline that needs to be strengthened. It was pointed out that there are already guidelines in place such as the CBD Tkarihwaí:ri Code of Ethical Conduct as well the Akwé: Kon guidelines for impact assessment that should be used, and adapted as necessary, as well as lessons learnt from the process regarding the Nagoya protocol. It was however pointed out that guidelines and recommendations are only useful if they are actually implemented, and capacity building is needed for external researchers approaching communities.

Another central issue is to sort out who are in the position to make decisions about sharing knowledge. It was agreed that sacred and secret knowledge are no go areas. However, what kind of knowledge can be shared differs between different parts of the world and between communities. Further, knowledge easily shared within or even between communities, may still not be appropriate to share with an outsider. Clear agreements on mutual terms have to be made between the community or the knowledge holders and scientists or other parties. In Guna Yala, there is a system established where any research in the District must pass through the communities and the Guna General Congress. The process takes its time, but it pays off and there are many examples of research and co-production of knowledge being conducted where the result is available for the communities and have benefited them, for example related to the marine biodiversity such as lobster, turtles and threats towards marine ecosystem as a basic resource for the Gunas.

Along the lines of misinterpretations of knowledge, the groups reported that databases may be useful for building and disseminating certain kinds of knowledge but problematic for others. Several groups pointed out that local and indigenous knowledge is living knowledge, it evolves and changes over time. In situ protection and development of crop genetic diversity is one example. It was recommended that translation and interpretation of knowledge should be carried out by representatives from the knowledge system. Landscape based approaches were brought forward as an alternative framework for gathering, compiling, and storing knowledge, where, similarly to breeding, the practices in the landscape are part of the generation and documentation of knowledge. Stories are also a very good ways of storing information within the community.

Different ways of empowering local communities to be able to make the decisions on what to share, how to share, and with whom, was discussed. In Sweden and France, there are web-based databases where individuals can self-report information on e.g. sightings of birds or other biodiversity, as an indicator of species trends and ecosystem change. The person who reports can decide the level of detail of what she or he is sharing. Transfer of technology or making technology available to communities were brought forward by many as bearing great potential for also transferring the decision making on knowledge to the community, and as a useful venue for collaborations. Geographical Information Systems (GIS) and maps can be a powerful tool. Locally and internally generated maps and associated information has been shown to be very useful within communities, examples are community mapping in South Africa where the techniques were handed over to the elders who facilitated the process. Using maps and GIS can also help the community to communicate for example with governments, and emphasize what is place specific.

It was also pointed out that the openness towards sharing of knowledge within a community is often strongly related to the recognition that the community has from the outside. This may be different between Indigenous Peoples and local communities, where Indigenous Peoples may have some kind of recognition, whereas a local community may be less likely to be respected as a source of knowledge.

Session V

Promoting diversity of knowledge as an underlying principle and cross-cutting approach in ecosystem assessments and the work of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)

The expected outcome of the session was to provide sufficient insight into the IPBES process and associated initiatives to be able to identify opportunities and potentials for connecting across knowledge systems and provide positive synergies.

Tirso Gonzales from the University of British Columbia Okanagan presented experiences from the ongoing local participatory assessments in the Andes and the global scale International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). He argued that when we make an ecosystem assessment we need to understand how people and ecosystems interact. In an Andean perspective there are three communities that are part of the *nurturance of everything by everybody, for everybody*: people, nature and gods - deities (Apus, Wacas). This implies moving from the Anthropocene towards the Pachacene,²⁶ with a strong emphasis on Andean cultural affirmation. There is learning from the Andes which is important to share.²⁷ The PRATEC-NACAs assessment and strategies to tackle climate change in the Andean ecosystems is grounded in an indigenous paradigm of cultural affirmation. The vision is to nurture a culturally diverse world. The mission is the recovery and revitalization of the agriculture and cattle raising and cultural practices of Andean- Amazonian peoples. The approach, or entry point, is revalorisation of traditional agricultural practices to work with communities and their knowledge. The research methodology is recovery of memory through cultural affirmation. It is based on accompaniment: living together and sharing with communities that affirm the Andean peasant mode of living, a way of life that is based on the nurturance of the chacra (plot of land).

The origin of climate change in the Andean and Amazonian communities' perspective lies in a generalized loss of respect – loss of respect between among humans and loss of respect towards nature and the deities. At the core is the need to recover this respect.

The IAASTD was a science-based global and sub-global assessments of agriculture. Within IAASTD, there was recognition of three major systems of agricultural production: conventional production oriented systems, agroecology systems and indigenous or traditional systems. However, Tirso argued that IAASTD neglected consultation with key stakeholders at national and subnational levels. IAASTD did not fully recognize the learning from indigenous and traditional systems which is necessary if we are to be successful in the transition towards sustainable food

²⁶ Pacha is an Andean word meaning the Earth. It is the representation of the macrocosmos at the microcosmos place based level.

²⁷ E.g. from the Association ANDES (presentation in dialogue workshop by Alejandro Argumedo), Agroecología Universidad de Cochabamba (AGRUCO) and Andean Project for Peasant Technologies (PRATEC-NACA). These organisations are examples of approaches based on indigenous cosmovisions.

production, as 60% of the production of food in Latin America comes from peasant or low input and indigenous and traditional systems.²⁸

Salvatore Aricò from UNESCO explained the background of the IPBES. The IPBES is intended as a mechanism interfacing science and policy, and meant to be a two way process. The policy should respond to the science, but the IPBES should also support scientists to provide policy relevant information. Salvatore stressed that the information should serve multiple constituencies: Governments, Civil society, and Indigenous Peoples and local communities. In order to fulfil this aspiration for the broad relevance of the work of the IPBES, a two-way dialogue between all knowledge holders will be necessary. There is a need to invite these diverse stakeholders, knowledge holders, and rights holders to provide policy perspectives, and get an understanding of the policy makers needs. IPBES has four functions, knowledge generation, assessments, support for policy formation, and capacity building that needs to cut across the earlier three.

Salvatore explained that IPBES is learning from the IPCC and hopefully will lead to the same kinds of impact. The credibility and independence of the IPBES is critical. The knowledge used in the assessments has to be relevant and available, but there is no stipulation that only peer-reviewed information can be considered. The importance of respecting the contributions of indigenous and local knowledge has been acknowledged, so it will be necessary for the IPBES to find ways to work with different worldviews. One of the challenges is to determine the governance structure, so that everyone can have a seat and a stake. The upcoming meeting in Panama City is mandated to determine the modalities and institutional arrangements of the platform. The word platform implies dialogue and interaction, and this will be necessary from the earliest stages to ensure the success of the IPBES. For example, there is a need for holders of non-western knowledge systems, to play a role in generating the conceptual framework. There is also need for the participation of Indigenous Peoples in scoping processes and in developing appropriate methodologies, particularly for the assessment phase. A key issue is how to deal with undertaking assessments at different scales, when national governments have decided that IPBES should not be dealing with the local level. However, there are opportunities for input into regional and sub-regional assessments.

Torbjörn Ebenhard from the Swedish Biodiversity Centre focused in particular on aspects of the IPBES processes where Indigenous Peoples and local communities have a stake and a potential to influence.²⁹ Torbjörn highlighted suggested processes and structures of IPBES that should be formulated in a way that takes local and traditional knowledge and knowledge holders into consideration. The rules of procedure for the IPBES plenary will stipulate how governments, knowledge holders and stakeholders may participate in the work of IPBES. Torbjörn argued that holders of local and traditional knowledge should be seen not only as stakeholders with a vested interest to protect, but also be recognised and valued as suppliers of essential knowledge, just as holders of scientific knowledge. Torbjörn suggested that holders of local and indigenous knowledge should be included in the IPBES bureau in their role as experts and of suppliers of knowledge and expertise.

Rules for the operation of IPBES are of high relevance for the inclusion of local and traditional knowledge, including rules on receiving and prioritizing requests, preparing assessments and accepting, adopting and approving reports, dealing with conflicts of interest, the peer review process, the nomination and election of

²⁸ Altieri and Koohafkan 2008, IAASTD 2009, Maffi and Woodley 2010

²⁹ See background document for dialogue workshop on <http://www.dialogueseminars.net/Panama/literature/literature.html>: IPBES and traditional and local knowledge. An initial assessment of relevant sections in IPBES background documents.

reviewers, the use of grey literature in reports, guidelines for treatment of traditional and indigenous knowledge, reflection of minority and majority views in reports, and assigning and defining levels of uncertainty.

Further, Torbjörn presented possible relevant elements of the work programme of the IPBES platform, for example on strategic partnerships, communication and stakeholder involvement, as well as on potential activities of the work programme. Such activities include describing the assessment landscape, developing consistent assessment methods and approaches, carrying out global and regional assessments, catalysing and promoting national and sub-regional assessment activities, carrying out thematic assessments of new topics, identifying and prioritizing gaps in knowledge, engaging key stakeholders in addressing prioritized knowledge needs, making effective use of modelling and scenarios, identifying and prioritizing capacity-building needs, increasing access to data, information and knowledge, and addressing balance in participation in the platform's work programme.

Alejandro Argumedo from Asociación ANDES in Peru made a brief introduction of the Indigenous Peoples' Biocultural Climate Change Assessment Initiative, IPCCCA. This is a global initiative of Indigenous Peoples for understanding the changes of climate that we're seeing at a global level and its impacts on the biocultural lives of Indigenous Peoples. It contributes to find possible responses for adaptation and mitigation. Climate change assessments under IPCCCA have been done so far in US, Pacific, Panama, Finland, Russia, India, Philippines and China. The work of IPCCCA is based on a methodology from the experience of ANDES especially with the Millennium Ecosystem Assessment and other evaluations, which allows work on methodologies, epistemologies and the adaptation to scientific methods.



Participants in the dialogue workshops visited the surroundings of Usdub together with their Guna hosts. The landscape surrounding Usdub is still governed and managed in accordance with the Gunas traditional and local practices.

Photo: Pernilla Malmer

Panel with reflection and views on the IPBES and its process by diverse knowledge holders

Brigitte Luis Guillermo Baptiste from von Humboldt Institute, Colombia stated that the issue is complex with the multiplicity of knowledge holders, who are simultaneously stakeholders. There seems to be a tension between national governments and local and indigenous communities. Obviously each country will respond in its own way, but it is also possible to put some pressure on governments. In Colombia our 82 different groups of Indigenous Peoples need to find processes for inclusion and to develop indicators they can use. Institutions such as Humboldt can support them in an equitable and capacity building process. Another question is what is most important, capacity building or getting policy relevant information to those who need it? Brigitte thinks there is need to find a way to do both things at the same time – some ways have been suggested in this dialogue workshop. A third element that can be part of the work of IPBES is the terms for agreements between parties for contracts on sharing of knowledge and genetic resources. Here, IPBES might provide a facilitation mechanism to go beyond what was done in the framework of the CBD. One part of this would be to develop indicators based on and including the daily work of Indigenous Peoples, to see if agreements have been set up in an equitable reciprocal way between Indigenous Peoples and trans-national organisations.

Terence Hay-Edie from GEF Small Grants Programme (implemented by UNDP) presented three programs of interest in the context of IPBES and wider. The *UNDP Equator Initiative* brings together people at an international platform to recognize and advance local sustainable development solutions for people, nature and resilient communities. The focus was initially on the Equator belt, but has been extended to all developing countries. It awards a prize every two years highlighting local and indigenous initiatives that are particularly successful. *GEF Small Grants Programme* was established after the Rio Earth Summit and provides funding to civil society groups. It has decentralised decisions at a country level. The GEF Small Grants Programme has had a range of positive assessments of ways that it has supported civil society efforts to reduce biodiversity loss, and of efforts to reduce poverty. *BES-Net* is an initiative of UNDP, UNEP - WCMC and the Norwegian Directorate for Nature Management. It is intended to be a capacity building network for IPBES, which connects policy makers, scientists and implementers, who could be knowledge holders. Some issues for BES-Net are how traditional knowledge can feed into policy, but also to find ways how implementation of IPBES can be done in a way that utilises traditional knowledge at a community scale. One approach might be to develop centres of excellence in developing countries to increase capacity building. A web based presence is planned, and also face to face strategies.

Pierre Commenville from IUCN said that what is most important for them is that stakeholders really have a voice in the process. There is an important differentiation between knowledge holders and stakeholders. IPBES is intended to inform decision making at many levels, and without a strong process of consultation with stakeholders, this will not occur. For the plenary, the role of stakeholders should be deeply explored; it is important that their views are not merely “taken into account”. Pierre thus argued that IPBES needs a strong consultation mechanism. IPBES should have a strong communication strategy, and means for consultations and communication. He concluded by saying that we need to build on existing initiatives to make this platform work.

Claire Brown, UNEP-WCMC argued that IPBES should build on existing initiatives, including the Sub-Global Assessment Network. This comes out of the Millennium Ecosystem Assessment network at the national and regional (subglobal) scale. Many

people do not want to participate in a global assessment but would prefer to do something at a national or local scale. Assessments should be seen as tools for better decision making, to allow these to feed into decision making.

Joji Cariño from IIFB first addressed the issue of diversity - the whole issue of the IPBES platform is biodiversity, but to date, the diversity of knowledge needs strengthening in the platform. We have to keep advocating that it is a *diverse knowledge platform*. Secondly, we need structures that are not only intergovernmental but include other actors. In the Rio+20 process it is envisioned that in future institutional arrangements, Indigenous Peoples and other major groups will be full participants with a right to speak and to make proposals, only without the right to vote. This must be achieved also in IPBES. Thirdly, Joji raised the issue of mechanisms to bring knowledge experts of Indigenous Peoples into the work of IPBES with the same recognition as the scientists. In the CBD process, there are mechanisms for the IIFB members to participate as experts. We also need to talk to the scientists to recognize the diversity of knowledge holders working together as practitioners. Fourth, with a range of knowledge systems involved which are complementary and additive to each other, we need to go further in advancing the co-production of knowledge. Indigenous Peoples and local communities are Centres of Excellence on the ecosystems where they live. Joji argued that unless we are proactive, we will not get the needed changes. If we ask for a lot, but do not offer concrete proposals, not much will happen. Being proactive is collaborating at a real level, seizing opportunities and sharing where we can make contributions.

Questions and answers, session V

The presentations of the panel were followed by a lively session on questions and answers concerning the IPBES and the opportunities it will entail. Several commentators were concerned about how open the IPBES process actually is for including a diversity of knowledge systems and the concerns of Indigenous Peoples and local communities. Several comments brought out the deep stake that Indigenous Peoples have in these issues, in the words of one participant: “we are not just guardians; we are moving all the dirt!” People on the ground which are creating and maintaining biodiversity need to be taken into account from the very beginning and at all levels with unfiltered and direct access to information and processes. Another participant shared her hope in the progress that we are making and that sharing knowledge can be good and useful for communities. Local people may have a lot of knowledge on local climate change, but the world is now facing a climate crisis and we need to come together to be able to act fast.

Salvatore responded that there are opportunities to influence the IPBES, and that we must strive for a process whereby a year from now, there is a way that traditional knowledge holders can participate. IPBES is an intergovernmental body, and if a demand is coming from governments to include diverse knowledge holders, this cannot be denied. Salvatore further commented that national governments can be influenced through IPBES. **Joji** emphasized that IPBES is a window of opportunity and that the agenda of IPBES is actually our common agenda: we need a global transformation for better action in the world. We as Indigenous Peoples and local communities need to make connections with our core work and the rest of the world that we need to collaborate with.

The separation of the roles of Indigenous Peoples and local communities as experts and rights holders, as emphasized by Torbjörn in his presentation, was given support from several commenters. The UNDRIP was demanded by some as the normative framework; however there was also concerns that this could bring Indigenous Peoples and local communities apart. There were calls for funding for capacity building and

participation, and the inclusion of developing country researchers. Parallel with this, the need for preparation among knowledge holders was declared, to be able to make the most of the opportunities; for example, to make suggestions for IPBES on parallel peer-review processes or validation, or make input on how to deal with ownership of knowledge

Another theme in the discussion was on the relevance of the global for the local, and the role of local assessments in the IPBES. Several participants brought forward the importance of territory and the local for knowledge holders. It was strongly recommended that there should be room for local and national assessments in the IPBES, as this is where many of the decisions for biodiversity and ecosystem services are being made, and also the most relevant level for many of the participants at the meeting.

Comments from the floor also concerned the lessons learned from previous processes such as the MA and CBD. It was pointed out that a holistic integrated approach is needed in IPBES from the very beginning, as was not the case in the CBD. Also, insights from diverse knowledge systems need to be part of the conceptual framework, in the MA inclusion of local and indigenous knowledge came in too late in the process. There was also support for building on existing institutions in the continuation of the IPBES and similar issues, such as UNEP-WCMC, IUCN etc., but concerns were also raised about first mover advantages, i.e. that some actors are dominating the processes. *Salvatore* clarified the differences between IPBES and MA and CBD, and also that IPBES is not as of now a UN body but that there are values to be added if it would be part of the UN, such as sharing of data, expertise, and networks, the convening power, and also some neutrality.

In the concluding comments from the panel, *Brigitte* emphasised the need to build alliances among countries, science is also weak in policy processes, and proposed practical alliances, not making epistemological compromises but building better science. *Terence* further shared the funding opportunities available by UNDP, and the vision that this group can contribute to more inclusive assessments. *Claire* emphasised capacity building and to include young scientist and provide access to data, and hoped that IPBES will collaborate with other actors for this to be realized. *Pierre* further pointed out the opportunities to influence regional and thematic assessments in the IPBES. *Joji* concluded by saying that we can provide a major contribution and need to be recognized for equal collaboration. However, the window of opportunity provided by IPBES is only useful if we have a strategy for how to interact.

Summary of group discussions session V

The aim of the discussion was to summarize the discussions from the Guna Yala dialogue workshop, and to distil key messages, with the upcoming IPBES meeting as a first target. This process brought out some of the variance in opinions and experience of the participants, for example regarding experiences with validation, what we mean by science, and differences between recognized indigenous groups versus local communities or practitioners' knowledge. Some general conclusions from the groups are listed below. The outcome of the group discussions with specific relevance for IPBES is summarized in Annex 1, which was also presented during the subsequent IPBES meeting in Panama City.

The participants acknowledge that indigenous, traditional, local, scientific and other knowledge systems are diverse manifestations of valid and useful knowledge systems which can contribute to the sustainable management of ecosystems..

- » There is reciprocity in local and indigenous knowledge systems. This is a challenge to catch in science. And hence a difficulty in the meeting between the knowledge systems if this is not respected.
- » Learning is also related to belief systems. Spiritual belief systems comprise intergenerational learning and include the relationship between nature, humans, and deities. This more holistic paradigm leads to morals and ethics about human-nature relationships.
- » Co-production of knowledge from the beginning to the end of a research or assessment process is a way forward.
- » Validation of diverse knowledge systems where one knowledge system applies its validation methods on another system might not be desirable; it comes with a cost with respect to the integrity and complexity of knowledge systems. On the other hand, there were also experiences that scientific validation can add legitimacy to the knowledge and practice of local groups.
- » Biocultural systems that are functioning in a sustainable way should be identified and valued, regardless of our ability to validate these using scientific approaches
- » A research project involving sharing local and indigenous knowledge should be explicit about what the research is for, and for whom. It is important to understand and confirm the aspirations of knowledge holders and researchers.
- » It is important that communities have clear agreements and clear rules for collaborations between external actors and communities. This could be done through Community Protocols and through mediators and regulators. CBD's Ethical Code of Conduct is a good example in this regard.
- » Knowledge holders should be encouraged and supported in doing risk assessments of potential consequences for them of a project.
- » Science has a cultural context. Science is a knowledge system among others, and is in itself diverse, there are for example great differences between social science and natural science.
- » Education at all levels needs to recognize and promote the value of diverse knowledge systems. Formal education should allow for a diversity of cultures and knowledge systems. Encourage the involvement and participation of indigenous educational institutions such as tribal universities, research centres and knowledge cooperatives that promote intercultural understanding and respect, as well as scientists from developing countries.

Closing session

Concluding words

The organizers outlined the activities that would be arranged based on the dialogue workshop during the IPBES meeting, including a presentation at the stakeholder forum 15 April and a side event Tuesday afternoon 17 April. The dialogue project will continue in a third phase, and the representatives from SwedBio/SRC and NAPTEK/CBM declared their interest in facilitating this kind of sessions in the future, and opened up for comments and proposals for issues participants felt as priorities to discuss. Alejandro Argumedo suggested a mapping of all actors. There are different levels of actors that need to be involved, such as tribal and indigenous universities, and knowledge collectives and networks. It would be useful to map out initiatives where knowledge sharing across scales has taken place to identify methods, and best practices towards developing a strategy. From the IIFB it was reported that there are strategic discussions within IIFB about how to engage with IPBES but also concerning traditional knowledge within other UN bodies. Marie Kvarnström from NAPTEK suggested that when the report is ready, we may investigate the possibilities of building on the nice presentations and illustrations given to publish a book from the meeting. Maria Tengö from SRC also opened up the opportunity to further develop the background document for potential uses. The participants were looking forward to follow and get updates on the outcome of the upcoming IPBES Panama meeting.

Closure of the dialogue workshop

The International Co-ordinating Team through Maria Schultz warmly thanked the FPCI and all the representatives from the local community in Usdub for everything they had shared with the dialogue participants during these unforgettable days in Usdub. The FPCI Youth Group *Fotógrafos sin fronteras*, Usdub (FSF-Usdub) that contributed with many of the pictures to this report, the women preparing the delicious food, the people that generously opened their houses for participants to stay, and the youth engaged in helping out with whatever matter coming up. It would not have been possible to have this workshop without FPCI. It was vital to have a strong indigenous organisation like FPCI, working with commitment in their communities, and able to organize workshops like this in cooperation with them. Maria also thanked all the participants, for their commitment and generous contribution through the workshop. Special thanks were also directed to the interpreters.

For the community of Usdub this was also an important day from another aspect, as it was the day of the Usdub Chief Leodmiro Paredes celebration of his 20th anniversary as Chief of Usdub. The dialogue workshop had been honoured by his presence during the three days, and at this very specific occasion of the closure of the meeting, he shared his views from his long life and how he step by step obtained the necessary experiences, wisdom and confidence to finally be selected as Chief of Usdub, as well as how this wisdom has guided his leadership. Finally, he honoured the workshop by inviting all participants to celebrate with him in the Community Hall. In the ceremony, Usdub's Guna singers were singing their traditional songs about their land and waters, expressing their sentiments and love and knowledge in their own language. It was indeed a closure in dignity and in the same spirit of connecting diverse knowledge and cultures that the dialogue workshop was all about.

Epilogue

Diverse knowledge systems in IPBES Panama meeting

Most of the participants in the workshop also took part in the IPBES Stakeholder Forum 15 April, presenting the first outcome of the workshop, in the form of reflections from the dialogue seminar (see Annex 1). A well attended side event presenting the results from the dialogue workshop to participants of the IPBES was also held at Hotel Sheraton Four Points, Panama City, 17 April 2012.

The dialogue workshop informed the Second Session of the Plenary to establish the IPBES in Panama the week after the dialogue workshop, and seems to have bolstered the openness and support for indigenous knowledge and diverse knowledge systems in the work of IPBES. The final outcome contained several important points of relevance to follow up regarding connecting diverse knowledge systems in IPBES. Some of examples from the report (UNEP/IPBES.MI/2/9) from the IPBES meeting are:

Operating principles of the Platform

One of the questions before the meeting was if holders of traditional knowledge would be acknowledged and represented only as stakeholders or as knowledge holders as well. Texts in the decisions from the IPBES session includes both stakeholders and knowledge holders, for example text under operating principles states that the platform should collaborate with existing initiatives on biodiversity and ecosystem services, including amongst others networks of knowledge holders. Under the operating principles it is also stated that the platform should recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems.

Institutional arrangements

Regarding the Plenary, organisations such as intergovernmental or nongovernmental, including of indigenous peoples and local communities, which are qualified in matters covered by the Platform, may participate in the Platform as Observers. And the plenary are encouraged to take into account, as appropriate, inputs and suggestions made by relevant stakeholders, such as indigenous peoples and local communities.

Regarding the scientific functions to facilitate the work of the Platform it was included to engage the scientific community and other knowledge holders with the work programme, taking into account the need for different disciplines and types of knowledge, gender balance, and effective contribution and participation by experts from developing countries; and exploring ways and means to bring different knowledge systems, including indigenous knowledge systems, into the science-policy interface.

Subsidiary bodies of the Plenary – Bureau and Multidisciplinary Expert Panel

In addition to the Bureau, that will oversee all administrative functions, a Multidisciplinary Expert Panel will be established that will carry out the scientific and technical functions of IPBES. An intersessional process was agreed upon, with broad participation from the scientific and policy expert community and other knowledge holders from both developed and developing countries and countries with economies in transition, on how the Multidisciplinary Expert Panel would be structured.

The agreed definition regarding “Multidisciplinarity” was that it connotes an approach that crosses many disciplinary boundaries, knowledge systems and approaches to create a holistic approach, focusing on complex problems that require expertise across two or more disciplines. Multidisciplinarity arises when scientists (including natural and social scientists), policy and technical experts, natural resource managers, other relevant knowledge holders and users, interact in an open discussion and dialogue giving consideration to each perspective.

Work programme

Areas identified as being important by participants included: to develop an understanding of how to effectively integrate local and traditional knowledge. Regarding the Intersessional work and the preparations for an initial work programme the Secretariat was requested to compile a critical review of assessments including experiences of integration of knowledge systems.



Annex 1: Initial reflections from the dialogue workshop

15 April 2012

Introduction

Indigenous Peoples and local community representatives, scientists, international organizations, and NGOs are deeply concerned about the degradation of ecosystems and loss of biodiversity. This concern led to the establishment of a dialogue for the interaction of diverse knowledge systems (traditional, indigenous, local, and scientific) called *Dialogue on Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems*. This is a starting point for working together to address these concerns in a holistic and open manner. A dialogue workshop was carried out on 10-13 of April, 2012 in Usdub, Guna Yala, Panama. Participants were scientists, governments, Indigenous Peoples and local community representatives, international organizations and NGOs.

It was acknowledged that indigenous, traditional, local, scientific and other knowledge systems are different manifestations of valid and useful knowledge systems which can contribute to the sustainable management of ecosystems.

IPBES represents an opportunity to establish a dialogue between knowledge systems with the full and effective participation of knowledge holders to debate, propose and plan ideas for moving forward. In paragraph 7 of the Busan outcome of the IPBES process a number of principles were identified. One of them was to recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems.

Based on the dialogue in Usdub it was recognised that diverse knowledge systems, such as indigenous, traditional, local and practitioners knowledge, is a cross-cutting issue in the rules of procedure of IPBES as well as in its functions, activities, and future work. In this regard, a series of principles and values was recognised to be important for a continuous dialogue in IPBES and to create a productive, effective and respectful space for the interaction of all interested parties.

These are the following:

- » **Respect.** It is understood that all knowledge systems have their particularities and there should not be a supremacy of one knowledge system over another.
- » **Trust** needs to be generated between the different parties to allow the exchange of knowledge systems to be effective and fruitful.
- » **Reciprocity.** The principle of reciprocity needs to underline sharing between knowledge systems.
- » **Complementarities** of the different knowledge systems has been recognised as a way forward.
- » The **inter-relation between biological and cultural diversity.** Since time immemorial Indigenous Peoples have demonstrated how this relation generates and maintains biodiversity and ecosystem services. It is a relation where biodiversity is not at the service of mankind, but mankind is one element in a complex network.

The following reflections for IPBES were discussed during the dialogue workshop:

Indigenous Peoples and local communities must be recognized both as knowledge holders and experts on the one hand, and as rights-holders and stakeholders on the other.

- » **Participation** Equitable, full and effective participation of Indigenous Peoples and local communities to be guaranteed at all levels in IPBES. This includes the plenary, the bureau, and the working groups as well as the functions from local to global levels - in assessments, knowledge generation, capacity building, policy support tools and methodologies.
- » **Sub-global including local assessments.** It was recognised that indigenous and local knowledge is of indispensable value in Sub-Global Assessments – especially at the local level, and it is important to support and catalyse such assessments under the IPBES mandate.
- » **Intercultural dialogue.** To foster a horizontal and respectful dialogue between different stakeholders, a mechanism could be developed which reduces the asymmetries of power between the different stakeholders and establishes an atmosphere of trust among them. In this regard, a dialogue space among knowledge systems could be created. IPBES can provide and facilitate these dialogues, where specific issues can be addressed from different perspectives based on diverse knowledge systems such as scientific, Indigenous and local. This can be done through a virtual and physical permanent space.
- » **Validation.** IPBES could facilitate a space where interested parties can work on developing evaluation procedures that fully recognize diverse knowledge systems with their specificities. As stated in the principles of the document, this needs to be based on mutual respect and understanding. This is based on distinct mechanisms for dealing with grey literature and Indigenous and local knowledge.
- » **Funding.** In order to enable a full and effective dialogue between diverse knowledge systems within IPBES, the need for the creation of some mechanism providing financial resources was recognised. Particularly important is funds to enable full participation of Indigenous Peoples and local communities in their function as experts and knowledge holders.
- » **Existing frameworks and guidelines.** It was also reflected that the international human rights framework needs to be respected, including the UN Declaration of the Rights of Indigenous Peoples. The CBD Tkarihwaié:ri Code of Ethical Conduct as well the Akwé: Kon guidelines for impact assessment should be used, and adapted as necessary, as well as lessons learnt from the process regarding the Nagoya protocol.

Annex 2: Seminar agenda

10 April – Arrival day

- 10.00 a.m.** **Welcome**
- Introduction to the local community in “Casa de Congreso” in Usdub
- 7.00 p.m.* *Welcome dinner*

11 April – First workshop day

- 9.00 a.m. – 9.30 a.m.** **Opening session**
- Welcome to Panama and Guna Yala land. Inauguration ceremony. FPCI
 - Opening statement – *Malia Nobrega*, Coordinator, International Indigenous Forum on Biodiversity
 - Introductory remarks, introduction of facilitators – *Maria Schultz*, Director The Resilience and Development Programme (SwedBio)
- 9.30 a.m. – 11.00 a.m.** **Introductory session**
- Explaining the rules and objectives of the dialogue seminar by the facilitators
 - Introduction of participants and expectations of the workshop
- 11.00 a.m. – 11.30 a.m.* *Break*
- 11.30 a.m. – 1.00 p.m.** **SESSION I: Biological and cultural diversity and diverse knowledge systems**
- Expected outcomes:* Understanding and respecting diversity in human-nature inter-relationships and knowledge systems .
- Diverse knowledge systems, what does it mean? – *Yvonne Vizina*, Métis National Council, Canada
 - Knowledge-based approaches to complex social-ecological systems – *Douglas Nakashima*, UNESCO
 - Q & A (30 minutes)
 - Working groups on knowledge systems, and their significance/meaning for cultural and biological diversity, 5-6 groups (60 minutes)

2.30 p.m. – 4.00 p.m.	<p>SESSION II: Experiences of exchange between knowledge systems regarding ecosystem assessment, management, ecosystem functions, and ecosystem services</p> <hr/> <p><i>Expected outcomes:</i> Insights about indigenous knowledge systems and science, and understanding of key factors behind successful cases of exchange between knowledge systems.</p> <ul style="list-style-type: none"> • Cultural mapping , GIS technologies and ecosystem assessments/ land use change – <i>Jorge Andreve</i>, FPCI, Panama • Bridging knowledge systems and scales: Quechua Biocultural Heritage in the Potato Park – <i>Alejandro Argumedo</i>, Asociación Andes, Peru • Knowledge, spirituality and community resilience – <i>Gathuru Mburu</i>, African Biodiversity Network, Kenya • Q & A (30 minutes)
<i>4.00 p.m. – 4.30 p.m.</i>	<i>Break</i>
4.30 p.m. – 6.00 p.m.	<ul style="list-style-type: none"> • Working groups on experiences and values of exchange between knowledge systems in knowledge generation, ecosystem assessments and governance. (ca 5-6 groups) (90 minutes)
6.00 p.m. – 6.30 p.m.	Joint reflections of insights from the day
<i>7.00 p.m. – 8.30 p.m.</i>	<i>Dinner</i>

12 April – Second workshop day

9.00 a.m. – 9.30 a.m.	<p>SESSION III: Experiences of knowledge validation from diverse knowledge systems and barriers and bridges for adaptation and exchange</p> <hr/> <p><i>Expected outcomes:</i> Understanding of potentials and limitations of validation in diverse knowledge systems in assessments and other applications.</p> <ul style="list-style-type: none"> • Development of indicators of knowledge and sustainable practices – a two way validation system – <i>Joji Cariño</i>, Tebtebba Foundation; Philippines • Development of an alternative set of criteria for validation of traditional and local knowledge. Example from on farm conservation of native cultivated plants and their wild relatives – <i>Magdalena Machaca Mendieta</i>, Asociación Bartolomé Aripaylla /PRATEC, Peru • "Knowledge exchange in ecosystem assessments - previous experiences and looking ahead for IPBES" – <i>Maria Tengö</i>, Stockholm Resilience Centre, Sweden • Q & A (30 minutes)
<i>11.15 a.m. – 11.45 a.m.</i>	<i>Break</i>
11.45 a.m. – 1.00 p.m.	Working groups on experiences of validation of knowledge between knowledge systems in ecosystem assessments, (ca 5-6 groups) (75 minutes)
<i>1.00 p.m. – 2.30 p.m.</i>	<i>Lunch</i>

2.30 p.m. – 6.00 p.m. **SESSION IV: Documenting, storing, sharing, and controlling access to and benefits from knowledge and information from different knowledge systems, including access to and benefits from scientific knowledge by Indigenous Peoples and local communities**

Expected outcomes: Understanding different options for exchange and protection of documented knowledge, including advantages and limitations, related to diverse knowledge systems and data storage systems

- Traditional and local knowledge that can be shared and knowledge that are strictly “no-go-areas.” – *Preston Hardison*, Tulalip Tribe, USA
- Participatory plantbreeding – farmers and scientist’s validation systems for crop diversity and varieties. Ways of controlling access and sharing of benefits – *Regassa Feyissa*, EOSA, Ethiopia
- Classification, documentation and database of traditional knowledge in China – *Xue Dayuan*, College of Life and Environmental Science, Minzu University of China
- Ways of ensuring mutual respect and benefits in exchange between knowledge systems – *Myrle Ballard*, Native Women’s Association of Canada
- Q & A (30 minutes)

4.00 p.m. – 4.30 p.m. *Break*

- 4.30 p.m. –6.00 p.m.**
- Working groups on access and sharing of knowledge and principles of sharing of and benefiting from different kinds of knowledge

6.00 p.m. –6.30 p.m. Joint reflections of insights from the day

7.00 p.m. *Dinner*

13 April – Third workshop day

9.00 a.m. –12.00 p.m. **SESSION V: Promoting diversity of knowledge as an underlying principle and cross-cutting approach in ecosystem assessments and the work of Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)**

Expected outcomes: Opportunities identified for connecting across knowledge systems and provide positive synergies

- What is the value and expected outcome of an ecosystem assessment? – experiences from local Climate Assessment and IAASTD – *Tirso Gonzales*, University of British Columbia Okanagan, Peru / Canada
- IPBES, how is it expected to work? State of the art, including principled approaches to understanding and using knowledge, and how local and indigenous knowledge have been dealt with so far under IPBES – *Salvatore Arico*, UNESCO

- Ideas on where and how diverse knowledge systems could be integrated in IPBES – *Torbjörn Ebenhard*, Swedish Biodiversity Centre, Sweden
- Reflection and views on the IPBES and its process by diverse knowledge holders. (5 min each)
 - ▶ *Joji Cariño*, Tebtebba Foundation, Philippines
 - ▶ *Pierre Commenville*, IUCN, Switzerland
 - ▶ *Brigitte Luise Guillermo Baptiste*, Humboldt Institute, Colombia
 - ▶ *Terence Hay-Edie*, GEF Small Grants Programme (implemented by UNDP)
 - ▶ *Claire Brown*, UNEP-WCMC
- Q & A (20 minutes)

10.30 a.m. – 11.00 a.m. *Break*

11.00 a.m. – 12.30 p.m. • Working groups on how to connect diverse knowledge systems as a cross-cutting approach in ecosystem assessments and IPBES work

12.00 p.m. – 1.00 p.m. • Synthesis of the working group sessions discussions by facilitator

1.00 p.m. – 2.30 p.m. *Lunch*

2.30 p.m. – 6.30 p.m. **CONCLUDING SESSION: Way forward**

Expected outcomes:

- Recommendations to how include diverse knowledge systems in knowledge generation and ecosystem assessments in IPBES.
- Starting from the opportunities identified for connecting across knowledge systems to provide positive synergies, a framework for the third phase of the project. “Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems” will be outlined, for further presentation at the Stakeholder Forum and a side event at the IPBES Panama meeting.
- Plan for presentation of the outcomes of the dialogue in the Stakeholder Forum and a side event at the IPBES Panama meeting.

2.30 p.m. – 4.00 p.m. • Working groups on the way forward to contribute to strengthened exchange and cross-fertilization between knowledge systems in an equal, legitimate, and transparent way towards sustainable and resilient societies.

4.00 a.m. – 4.30 p.m. *Break*

4.30 p.m. – 6.00 p.m. Synthesis of the workshop including plenary discussion and closing remarks by facilitators, organisers and local host (FPCI)

7.00 p.m. *Dinner*

14 April – Excursion day

Morning excursion: Traditional practices in local surroundings of Usdub

Travel back to Panama City

Annex 3: List of participants

Participants

Alejandro Argumedo	IIFB region LAC - Asociación ANDES	Peru	alejandro@andes.org.pe
Armando Sarazua	Organización Sotzil	Guatemala	sotzil@gmail.com
Brigitte Luis Guillermo Baptiste	Alexander von Humboldt Institute	Colombia	brigittebaptiste@humboldt.org.co
Claire Brown	UNEP World Conservation Monitoring Centre	UK	Claire.Brown@unep-wcmc.org
Dolores Cabnal	Red de Mujeres Indígena sobre Biodiversidad - Mesoamérica	Guatemala	mujer.maya@gmail.com
Douglas Nakashima	UNESCO	France	D.Nakashima@unesco.org
Edna Kaptoyo	IIFB region Africa - Indigenous Information Network	Kenya	ednakaptoyo@yahoo.com
Estebancio Castro	Alianza Mundial de los Bosques Tropicales y Tribales	Panama	castroestebancio@gmail.com
Gathuru Mburu	African Biodiversity Network	Kenya	gathurum@yahoo.com
Gemedo Dalle Tussie	Institute of Biodiversity Conservation	Ethiopia	gemedod@yahoo.com
Geodisio Castillo	Instituto de Investigación y Desarrollo de Kuna Yala	Panama	geodisio@yahoo.com
Håkan Berg	Stockholm Resilience Centre / SwedBio	Sweden	hakan.berg@stockholmresilience.su.se
Jorge Andreve	FPCI	Panama	jladpennypa@yahoo.com
Jorge Ishizawa	PRATEC	Peru	jorge.ishizawa@gmail.com
Jose Antonio Medina	Red Indígena de Turismo Alternativo	Mexico	antonio.medina@rita.com.mx
Juan Carlos Riascos de la Peña	Corporación Ecozoica/ CEEESP / ICCA	Colombia	jcriascos@ecozoica.org
Lorenza (Florence) Daguitan	IIFB region Asia - Tebtebba / MDRC	The Philippines	flordaguits@yahoo.com.ph
Magdalena Machaca Mendieta	Asociación Bartolomé Aripaylla /PRATEC	Peru	aba_ayacucho@hotmail.com
Maria Eugenia Choque	Red de Mujeres Indígena sobre Biodiversidad	Bolivia	maeucho@gmail.com
Myrle Ballard	Native Women's Association of Canada	Canada	mballard@nwac.ca
Pierre Commenville	IUCN	Switzerland	pierre.commenville@iucn.org
Prassert Trakansuphakon	IIFB region Asia - IKAP	Thailand	ptrakan@gmail.com

Preston Hardison	IIFB region NA - Tulalip Tribe	USA	prestonh@comcast.net
Regassa Feyissa	Ethio Organic Seed Action / ABN	Ethiopia	eosa1@ethionet.et
Salvatore Arico	UNESCO	France	s.arico@unesco.org
Tirso Gonzales	University of British Columbia Okanagan	Canada/Peru	tirso.gonzales@ubc.ca
Terence Hay-Edie	GEF Small Grants Programme (implemented by UNDP)	USA	terence.hay-edie@undp.org
Torbjörn Ebenhard	Swedish Biodiversity Centre	Sweden	torbjorn.ebenhard@slu.se
Tracey Castro Whare	IIFB region Pacific - Aotearoa Indigenous Rights Trust	New Zealand	traceycastrowhare@gmail.com
Victoria Sharakhmatova	IIFB region Russia - LACH / RAIPON	Russia	v.sharakhmatova@gmail.com
Viviana Figueroa	Secretariat of Convention on Biological Diversity	LA / Canada	viviana.figueroa@cbd.int
Xue Dayuan	College of Life and Environmental Science, Minzu University	China	xuedayuan@hotmail.com
Yolanda Teran	IIFB region LAC - Andes Chinchasuyu	Ecuador	yolanda.teran7@gmail.com
Yvonne Vizina	IIFB region NA - Métis National Council	Canada	yvizina@gmail.com

Organisers

Alancay Morales	Forest Peoples Programme, rapporteur	Costa Rica	alancay@forestpeoples.org
Chico Carino	Tebtebba Foundation/Exeter University, rapporteur	The Philippines	cc468@exeter.ac.uk
Claudinei Nunes da Silva	Translator	Portugal	claudinei_nunes@yahoo.com
Florina Lopez	FPCI	Panama	florina.lopez@gmail.com
James Allen Clark	Translator	USA	jaclark@pdq.net
Joji Cariño	Tebtebba Foundation	The Philippines	tongtong@gn.apc.org
Malia Nobrega	Waikiki Hawaiian Civic Club / IIFB Coordinator	Hawaii	malianob@gmail.com
Maria Schultz	Stockholm Resilience Centre / SwedBio	Sweden	maria.schultz@stockholmresilience.su.se
Maria Tengö	Stockholm Resilience Centre, rapporteur	Sweden	mtengo@ecology.su.se
Marie Kvarnström	Swedish Biodiversity Centre, NAPTEK	Sweden	marie.kvarnstrom@slu.se
Onel Masadule	FPCI	Panama	masardule@gmail.com
Pernilla Malmer	Stockholm Resilience Centre / SwedBio	Sweden	pernilla.malmer@stockholmresilience.su.se

Representatives from the Guna Yala region

Eriberto Gonzalez	Cacique General de Guna Yala	Panama
Leodomiro Paredes	Cacique de Usdub	Panama
Placido Lopez	Secretario del Congreso General Guna	Panama
Gilberto Solano	Consejo Indígena Mesoamericano (coordinador)	Panama

Logistical support

Marcial Arias	FPCI – Relator	Guna Yala
Eliseo Gardel	FPCI – contabilidad	Guna Yala
Rene Arias	Voluntario	Guna Yala
Randy Gonzalez	Voluntario	Guna Yala
Nis Porras	Voluntaria	Guna Yala
Olo Gonzalez	Voluntario	Guna Yala
Duiren López	Voluntario	Guna Yala
Andres DeLeon	Voluntario	Guna Yala
Ologuna	Voluntario	Guna Yala



Photo: Marie Kvarnström

Annex 4: List of abbreviations

ABN	African Biodiversity Network
ABS	Access and Benefit Sharing
BES-Net	Biodiversity and Ecosystem Services Net
CBD	Convention on Biological Diversity
FPCI	Fundación para la Promoción del Conocimiento Indígena
FPP	Forest Peoples Programme
GEF	Global Environment Facility
ICSU	International Council for Science
IIFB	International Indigenous Forum for Biodiversity
IK	Indigenous Knowledge
IPBES	Intergovernmental Platform for Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LINKS	UNESCO's Local and Indigenous Knowledge Systems
LEK	Local Ecological Knowledge
LK	Local Knowledge
MA	Millennium Ecosystem Assessment
MDG	Millenium Development Goals
NAPTEK	A Swedish national programme on local and traditional knowledge concerning the conservation and sustainable use of biological diversity]
PECS	Program for Ecosystem Change and Society
SGA	Sub-Global Assessments
SRC	Stockholm Resilience Centre
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCMC	World Conservation Monitoring Centre

There is an increasing demand for ways to mobilize diverse knowledge systems for the benefit of more sustainable ecosystem stewardship globally. The need for acknowledgement of the critical link between cultural and biological diversity is also getting more attention. The international dialogue workshop “Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems” was held 10–13 April 2012 in Guna Yala, Panama, just before the meeting to establish the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES). The workshop is part of a longer dialogue process with participants representing a diversity of knowledge systems; indigenous peoples and local communities, scientists, policymakers as well as governments, to encourage cross-fertilization between knowledge systems in an equal, legitimate and transparent way.

This report provides a summary of the presentations and discussions that took place during the four days of intensive dialogue in the Guna Yala workshop. It also summarizes important points of relevance in the final outcome of the IPBES Panama meeting, to follow up regarding connecting diverse knowledge systems under IPBES.