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**Report of the International Expert  
Workshop connecting diverse Knowledge  
Systems in the context of IPBES**

# Diverse Knowledge





# **Report of the International Expert Workshop connecting diverse Knowledge Systems in the context of IPBES**

**April 22-25, 2013 at the International Academy for Nature  
Conservation, Isle of Vilm, Germany**

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Federal Agency for Nature Conservation**

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**Cover picture:** Honey bee in a yellow crocus blossom (left); Liverleaf (middle); Fiddler beetle on a yellow blossom (right) (H.Korn)

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## Contents

1	Background.....	6
2	Results.....	9
2.1	Statement on promoting experts of indigenous knowledge .....	9
2.2	Conclusions .....	9
2.2.1	Knowledge holder’s engagement vs. stakeholder engagement .....	9
2.2.2	Space for dialogue platforms inside / outside IPBES .....	9
2.2.3	Bridging role of knowledge holders.....	10
2.2.4	Knowledge for what purposes? .....	10
2.2.5	Knowledge in cultural context.....	11
2.2.6	Dialogue / framework of relevance for TK, referring to the conceptual framework .....	12
2.2.7	Inclusiveness of IPBES .....	12
2.2.8	Decentralization of IPBES.....	12
2.2.9	IPBES at local and national level .....	13
2.2.10	Methods for co-production of knowledge.....	13
2.2.11	Respecting multi-functionality .....	13
2.2.12	Living stories .....	14
2.2.13	Conflicts between knowledge systems .....	14
2.2.14	Complementary evidence.....	14
2.2.15	Visibility of diverse knowledge systems.....	15
2.2.16	Mobilization of existing data and evidence .....	15
2.2.17	Validation of knowledge.....	15
2.2.18	Multiple evidence approach for IPBES.....	16
2.2.19	Development of validation criteria.....	16
2.2.20	Willingness to share knowledge.....	16
2.2.21	Gender-specific knowledge.....	17
3	Abstracts of presentations .....	18
3.1	Connecting different knowledge systems, Axel Paulsch, PHD .....	18
3.2	Integrating knowledge systems: experiences from the Artic, Kári Fanner Lárusson .....	18
3.3	The Dzanga-Sangha Youth Initiative, Central African Republic (CAR) –“Can IPBES act as an incentive to conserve traditional knowledge?” Tatjana Puschkarsky, Ernesto Noriega .....	20
3.4	Mobilizing local knowledge for biodiversity conservation; Olivier Hamerlynck.....	21

3.5	Dialogue processes and a Multiple Evidence Base approach for connecting knowledge systems, Maria Tengö, PHD.....	22
3.6	Local, Global, and Back Again: Indigenous Knowledge and Scientific Knowledge (Systems) Within IPBES, Georg Peter.....	24
4	List of participants.....	25

## **Introduction**

The aim of the workshop is to give the opportunity to discuss how diverse knowledge systems can be connected in the context of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).

In its multi-stakeholder meeting in Panama 2012 and the first plenary in 2013 IPBES has decided that different forms of knowledge, including indigenous and local knowledge should be recognized and respected in the work of IPBES, e.g. in assessments. Nevertheless, the process how this recognition can be realized is still under discussion and the second plenary of IPBES (probably end of 2013) will have to discuss the respective inputs and proposals received until then. An information document to IPBES 1 prepared by UNESCO had proposed "organizing international expert workshop(s) that bring together relevant natural and social scientists with indigenous and local knowledge holders to initiate the process of elaborating the procedures for recognizing indigenous and local knowledge and for building synergies with science within the framework of IPBES" (IPBES/1/INF/5, Section F c).

In this sense, the current workshop wanted to give the opportunity to experts from science, indigenous organizations and other stakeholder groups to discuss proposals for coming IPBES meetings on how IPBES procedures can be shaped in order to allow the recognition and respect of knowledge coming from different knowledge systems.

In the first plenary the freshly elected Multidisciplinary Expert Panel (MEP) was requested "to recommend possible procedures and approaches for working with different knowledge systems for consideration by the Plenary at its second session, drawing on the inputs received" (IPBES/1/12, Annex III, para 11). The results of the current workshop are made freely accessible and forwarded to the MEP to form an input that the MEP can draw on.

The workshop was hosted by the German Federal Agency for Nature Conservation and organized by the Institute for Biodiversity Network e.V.

The participants had been invited in their personal capacity as experts and did not represent any organizations or governments. Their contributions are their personal opinions as experts and do not necessarily reflect the views of their institutions or the Federal Agency for Nature Conservation.

The workshop was held at the International Academy for Nature Conservation, Isle of Vilm, Germany, from April 22.-25. 2013.

This report puts together the results of the discussions and group work performed during the workshop and adds the abstracts of the introductory presentations. The participants agreed to formulate the results in a concise format: conclusions and main ideas were put as statements or theses, each of which is supported by an explanation or rationale and then the consequences / actions for the IPBES process are outlined.

## 1 Background

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is still in the process of being developed and procedures are not yet fully established. Nevertheless, there is common understanding that indigenous and local knowledge forms an important part of IPBES. For example, the IPBES founding meeting in April 2012 agreed that "in carrying out its work the Platform will be guided by the following operating principles: .... Recognize and respect the contribution of indigenous and local knowledge to the conservation and sustainable use of biodiversity and ecosystems" (UNEP/IPBES.MI2/9 Appendix 1, para 2d).

One of the subsidiary bodies of IPBES, the Multidisciplinary Expert Panel (MEP), in fulfilling its scientific and technical functions has to "explor[e] ways and means to bring different knowledge systems, including indigenous knowledge systems, into the science-policy interface" (UNEP/IPBES.MI2/9 Appendix 1, para 15 g). And in the work programme the Platform has to "develop an understanding of how to effectively integrate local and traditional knowledge" (UNEP/IPBES.MI2/9 para 20).

In other words, the question how to deal with different forms of knowledge is a crosscutting issue throughout all functions of IPBES. In the workshop John Scott (CBD Secretariat) presented that traditional knowledge (TK) is crosscutting in the CBD as well and that the respective working group (next meeting in September 2013) will also discuss on how to connect science and TK.

For the first official plenary meeting in January 2013, UNESCO, on behalf of the Interim Secretariat, had prepared an information document (IPBES/1/INF/5) that underlined the need to develop the necessary understanding and procedures to really enable IPBES to fulfill the requirements mentioned above. The information document was open for comments even after the first plenary and was not discussed in detail during that meeting.

Nonetheless, one of the issues for further consideration mentioned in that document was taken forward. i.e. "organizing international expert workshop(s) that bring together relevant natural and social scientists with indigenous and local knowledge holders to initiate the process of elaborating the procedures for recognizing indigenous and local knowledge and for building synergies with science within the framework of IPBES" (IPBES/1/INF/5, Section F c). The first IPBES plenary consequently requested "the secretariat to compile all comments received on the information document on recognizing indigenous and local knowledge and building synergies with science (IPBES/1/INF/5), and to support the Multidisciplinary Expert Panel in convening a multidisciplinary and regionally balanced expert and stakeholder workshop, among other actions, to provide input on this matter in developing the conceptual framework and other aspects of the work of the Platform" (IPBES/1/12, Annex III, para 9).

The Ministry for the Environment of Japan together with UNESCO and the UNU will organize such a workshop in Japan in June 2013 (9<sup>th</sup> -11<sup>th</sup>). Furthermore, we see the current expert workshop on Vilm Island, hosted by the German Federal Agency for Nature Conservation, also as a contribution to the necessary elaboration of the respective procedures asked for in IPBES/1/INF/5.

In the first plenary the freshly elected MEP was requested "to recommend possible procedures and approaches for working with different knowledge systems for consideration by the Plenary at its second session, drawing on the inputs received" (IPBES/1/12, Annex III, para 11). These inputs received, referred to in the last line of para 11, include outcomes of expert workshops as the current one and the one planned for June 2013 in Japan.

In Annex III of the report of the first plenary (IPBES/1/12, Annex III, para 17) the secretariat is requested to compile all comments on another information document as well, i.e. IPBES/1/INF/3, which had been prepared by the UNEP interim secretariat for IPBES and included ideas on the preparation of

assessments. In the list of contents of this document an Annex 3 is listed under the title: Procedures for recognition and incorporation of indigenous and local knowledge (IPBES/1/INF/3, page 2). Unfortunately, that Annex does not exist and the paper was not discussed in detail during IPBES 1. Further down in this document it is proposed that: "Assessments should be based primarily on publically available and peer-reviewed literature. Material which is not published in the peer-reviewed literature, including traditional knowledge, but which is available to experts and reviewers may also be considered, in accordance with annexes 2 and 3, and provided that such inclusion is fully justified in the context of the IPBES assessment process" (IPBES/1(INF/3 page 5, second para under 3.2). As neither Annex 2 nor Annex 3 exist, this para is clearly premature but it shows the need to develop procedures and processes for the recognition of different forms of knowledge prior to the second IPBES plenary (which will probably take place in early December 2013).

In its first meeting after election the MEP decided that the following MEP members will play a particularly key role in the IPBES process going forward on knowledge systems: Randy Thaman (Asia Pacific), Phil Lyver (WEOG), Rodger Mpande (Africa) and Edgar Perez (GRULAC) (personal communication Neville Ash, UNEP interim secretariat to IPBES).

The first plenary also entrusted IUCN together with ICSU to draft a stakeholder engagement strategy for IPBES.

The current workshop is not the first international meeting to discuss the issue of connecting diverse knowledge systems. For example, the Stockholm Resilience Centre (SRC) together with the International Indigenous Forum on Biodiversity (IIFB) has organized a dialogue process including two meetings, one in Jokkmokk in June 2011 and one in April 2012 in Panama (Guna Yala). These dialogue workshops discussed several issues which can be grouped under the following sub-headings: validation of knowledge, documentation and sharing of knowledge, and co-production of knowledge.

Validation: In different knowledge systems the criteria and methods to validate knowledge differ significantly, e.g. the scientific system relies on peer review, repeatable experiments and results whereas biocultural systems might rely on various ways and means of achieving social legitimacy of knowledge and hence its validation, including i.a. empirical validation, cultural validation or moral validation (see contribution of Jorge Ishizawa to the report of the Guna Yala Panama workshop under <http://www.dialogueseminars.net/Panama/>, page 22). Using the validation methods of one certain system (e.g. the scientific system) to validate knowledge from other systems (e.g. biocultural systems) is not a suitable way as it does not respect the integrity and complexity of differing knowledge systems. At least such a process should not have the consequence that knowledge is rejected because it cannot be proofed by another system's methods. The Guna Yala Panama report states that "To validate or evaluate knowledge across knowledge systems is a challenge that needs further consideration" (same source as above, page 4). This valuation problem needs a solution for several aspects of the work of IPBES: before IPBES accepts a thematic request to become subject of an assessment it wants to perform a scoping exercise, including an overview which knowledge exists on the specific topic. Whoever performs such an overview has to use certain criteria to decide which knowledge counts as reliably existing and which can be neglected because it does not fulfill the respective criteria. In a further step, when IPBES actually performs an assessment, the question which knowledge is worth to be mentioned in the assessment rises again. And finally, when an assessment comes to conclusions that recommend the implementation of certain measures, these conclusions will only be accepted by stakeholders as really valid if the according validation criteria have been respected.

As part of our workshop programme Georg Peter (German philosopher) gave background information on the theory of knowledge systems (see p. 24 of the present report).

In the Panama meeting the SRC (Maria Tengö) presented ideas for a so called "dual evidence base approach", in the meantime further developed into a "multiple evidence base approach". This approach suggests that "different knowledge systems are viewed as generating equally valid evidence [...] using different criteria of validation for data and information originating from different knowledge systems" (Guna Yala Panama report page 23). An application of this approach on IPBES would probably mean that a set of criteria would have to be agreed upon for the validation of each knowledge system and that these different sets would have to be used in each step of IPBES processes where information or knowledge is validated (e.g. during scoping, assessments and drawing conclusions). The definition of these sets of criteria would have to involve knowledge holders of the respective knowledge systems.

In practice, the use of the multiple evidence base approach could have the consequence that an assessment report has different chapters for knowledge generated by different systems and that these chapters may have to be reviewed by different reviewers according to their insight into the respective knowledge system. Maria Tengö in her presentation in our workshop gave an update of the further development of the approach (see p. 22 of the present report)

Documentation and sharing: IPBES will only be able to recognize knowledge that is somehow documented and accessible. Scientific knowledge is normally documented via peer reviewed publications and data bases, while other forms of knowledge might be documented only in grey literature, in oral tradition or in landscapes which can be seen as living libraries. Before using knowledge for assessments, IPBES has to make sure that the knowledge is willingly shared by the knowledge holder. This willingness can of course be seen as given for published scientific knowledge, but for other forms of knowledge a free, prior and informed consent should be applied. The Guna Yala Panama report (page 4) recommends that "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." The sharing of experience made with such risk assessments could be part of the capacity building function of IPBES. Ernesto Noriega and Tatjana Purshkarsky (WWF) in their presentation showed how a process like IPBES can motivate to conserve TK in Central Africa (see p. 20 of the present report).

Co-Production: One of the four main functions of IPBES is knowledge generation and especially the identification of knowledge gaps and the formulation of research questions. In order to create applicable solutions for problems in ecosystem management, adaptation to changing environmental conditions or the loss of ecosystem functions, knowledge holders of different knowledge systems could be involved in the process of formulating the respective research questions, in choosing the methods of data gathering and in drawing the conclusions. The resulting co-produced knowledge might then be more easily accepted and applied by stakeholders on the ground than knowledge produced by just one system (e.g. the scientific system). This would mean that knowledge holders of different systems would have to be present and heard in IPBES fora that formulate such novel research questions. Experiences made with methods for co-production of knowledge (e.g. community mapping, citizen science) could be shared via the capacity building function of IPBES. Some experience on integrating knowledge systems in the Arctic were presented by Kári Fanner Lárusson (CAFF) in our workshop (see p. 18 of the present report).

## **2 Results**

### **2.1 Statement on promoting experts of indigenous knowledge**

The inclusion of experts from Indigenous Peoples and Local Communities in the MEP would strengthen the over-all work of IPBES.

In the current MEP, it would be helpful to co-opt 2 indigenous knowledge experts / knowledge holders (1 male and 1 female) as observers, to complement the current composition.

Adoption of Rule 26, including nominations of experts to the MEP by observers from Indigenous Peoples and Local Communities, is essential to promote inclusion of such experts in this important body.

Additionally, the cross-cutting work of connecting diverse knowledge systems in the work of IPBES, would be enhanced having a staff responsibility within the IPBES Secretariat, including through the voluntary support of a member-State.

### **2.2 Conclusions**

Before shaping the main conclusions into a thesis-rationale-consequences format the workshop participants discussed about the question what interest indigenous peoples and local communities have in being part of the IPBES process. The discussion revealed that:

- a) IPLCs can contribute to the process but also benefit from it in a reciprocal manner.
- b) it should be ensured that global assessments are based on a more inclusive knowledge base enhancing the usability of the assessment in reciprocal arrangements.
- c) benefits should flow back home to knowledge holders and communities.
- d) community and TK friendly policies (pluri-cultural education systems / health systems / local cultural initiatives etc.) should be applied.
- e) IPBES could be envisaged as an early warning mechanism, working in both ways, i.e. IPLCs raising alarms or being warned of changes, e.g. changing range of malaria, insects etc.

#### **2.2.1 Knowledge holder's engagement vs. stakeholder engagement**

As an example of good practices, in the CBD stakeholders are considered as right holders in the processes where issues of direct relevance to them are discussed, such as traditional knowledge. "Stakeholders" as a term within the CBD process is used for other groups, which may have interests in the process such as civil society, NGOs and the private sector.

On the European regional level knowledge holder is used also.

#### **2.2.2 Space for dialogue platforms inside / outside IPBES**

Thesis:

Indigenous peoples and local communities (IPLCs) are rights holders to their knowledge, innovations and practices (referred to as traditional knowledge or TK). Therefore they should be afforded effective participation mechanisms when matters that affect them directly are discussed.

Explanation / Rationale:

IPLCs as knowledge holders have a different status from other 'stakeholders' or "interested others" in the IPBES process because IPBES includes consideration (and respect) of IPLCs knowledge (and/or knowledge systems). Recognition of rights facilitates the sharing of knowledge in a win-win situation.

This starting position is very important to facilitate a positive participatory process, based on mutual respect.

Consequences / Actions for IPBES:

Effective participation could be enhanced by

- a) IPLCs being able to nominate representatives to the MEP
- b) IPLCs being afforded a unique status as knowledge holders/rights holders.
- c) Providing enhanced participation mechanisms similar to CBD / WG8j, e.g. IPLCs Bureau which works with the Parties Bureau to guide meetings, Co-Chair of meetings, Co-Chairs of Contact Groups etc. (these are established practices within the CBD WG 8(j)).

### **2.2.3 Bridging role of knowledge holders**

Thesis:

Capacity building should be enhanced on both sides of the dialogue to facilitate cross-cultural exchanges.

Explanation / Rationale:

Some groups or individuals may be in a unique position with their cross-cultural experiences to build the capacity of the scientific community to understand and respect other knowledge systems and to incorporate them in IPBES outcomes such as global assessments. IPLCs also need to enhance their understanding of both science and the IPBES process, therefore this is a reciprocal proposal.

Consequences / Actions for IPBES:

Create rosters of experts (time bound with terms of reference) and cross-cultural facilitators (procedures of nominations). Identifying possible cultural bridges to assist in IPBES processes could include knowledge holders trained in science, ethno-biologists and ethno-botanists, social scientists, anthropologists, etc.

Create opportunities for cross-cultural dialogue.

### **2.2.4 Knowledge for what purposes?**

Thesis:

IPLC traditional knowledge flowing into the IPBES process should influence global assessments, which should in turn influence policy at the international, national, and local levels. As well as tackling the challenge of protecting and conserving biological diversity through global assessments, these policies should also translate into concrete measures on the ground that respond to the concerns of the communities from which the knowledge emerged in the first place, including policy which promotes the continuity and development of traditional knowledge systems and encourages and protects customary sustainable use (as the classrooms of TK transmission).

This would lead to better informed and rounded assessments and contribute to buy-in on a local to global scale. Additionally, it would contribute to the strengthening of traditional knowledge systems and benefit the communities from which the knowledge has emerged in the first place.

Explanation / Rationale:

If recognition of the contributions of IPLCs to biodiversity conservation and sustainable use translates into improved policies concerning traditional knowledge and customary sustainable use at the local level, IPLCs will be further encouraged to become involved in the process. This will create and

strengthen buy-in by IPLCs. This will guarantee that the international community increasingly benefits from IPLC's considerable local knowledge and experience. Inclusive assessments should generate outcomes of relevance to IPLCs.

Consequences / Actions for IPBES:

- a) Map various sectoral/thematic and intersectoral aspects of TK that could be valuable for global or regional assessments and create a conceptual framework for integration/inclusion in the assessment process.
- b) Collate appropriate case studies and existing transdisciplinary approaches in TK as examples which are in line with such an encompassing conceptual framework.
- c) Consider reciprocal arrangements.
- d) Consider what is the connection between Global Assessment and Policy Development for local implementation.
- e) IPBES's acknowledgement of the importance of TK should manifest itself in the endorsement of concrete policies that respect and promote the cultural heritage of IPs and LCs, particularly in the areas of education, health, agriculture, and the environment.
- f) Establishment of a multidisciplinary and cross-cultural working group dedicated to develop policy recommendations that would be included in the assessments. This group would also advise international and local authorities on the implementation of such policies.
- g) Create mechanisms within IPBES that allow IPs and LCs to call attention to their own concerns regarding degradation of their local environments and biodiversity, enabling them to propose assessments and raise red flags and early warnings.

### 2.2.5 Knowledge in cultural context

Thesis:

Traditional knowledge should not be extracted by cherry-picking de-contextualized fragments of information, but it should always be understood as part of a complex values-based and constantly evolving knowledge system.

Explanation / Rationale:

If knowledge is vetted through a too narrow filter so that only a particular form of information is validated, then there is a risk of de-framing or de-contextualizing the way knowledge is generated at the community level. In order to accommodate to the requirements of the scientific community for "validation", traditional knowledge might become skewed and ossified.

Consequences / Actions for IPBES:

Avoid acquiring the information from only a small number of selected individuals, but encourage broad community involvement in the assessment process as well as in the means of sharing the knowledge.

Make the most of the exchanges with local communities by supporting local cultural initiatives and the inter-generational transmission of knowledge.

Keep the IPs and LCs informed on the way the knowledge they have provided moves through the process, sharing with them the final assessments and their eventual impact on policy.

### **2.2.6 Dialogue / framework of relevance for TK, referring to the conceptual framework**

Thesis:

An appropriate Conceptual Framework needs to be developed (that is biocultural; - for dialogue between science and TK).

IPBES should provide a framework for promoting dialogue between different knowledge holders at different levels.

This may call for the formalization of an IPLC body that would have that dialogue with the MEP and others.

Explanation / Rationale:

IPBES should go beyond becoming a space for dialogue between science and traditional knowledge to promote dialogue between knowledge systems. It should also provide a framework that fosters this dialogue to take place locally and nationally, at the governmental, non-governmental, and academic levels.

Consequences / Actions for IPBES:

A mechanism (expert group) to create a Framework.

Creation of a holistic conceptual framework based on mapped elements and existing best practices of IPLCs and cross-cultural experts for guiding of assessment processes.

Establish a working group to develop a framework for dialogue that can serve as a guideline for decision makers at different levels.

Create a forum at which experiences and suggestions can be shared.

### **2.2.7 Inclusiveness of IPBES**

Thesis:

The work programme of IPBES across all its functions, would benefit from collaborative work informed by multiple expertise and diverse knowledge systems.

Explanation / Rationale:

The complexity of social-ecological systems requires collaboration among multiple expertise and diverse knowledge systems to co-produce complementary and holistic understanding of the inter-relationships between communities / peoples, biodiversity and ecosystem services.

Consequences / Actions for IPBES:

All elements of the IPBES work programme need to show how multi-disciplinary expertise and diverse knowledge systems are addressed, including indigenous and local knowledge, in accordance with guidelines approved by the MEP.

### **2.2.8 Decentralization of IPBES**

Thesis:

Decentralization of IPBES work to the most appropriate scale will enhance capacity-building and mobilization of regional, sub-regional, national and local expertise and resources, thus improving its quality, effectiveness, and ownership of IPBES processes and products.

Explanation / Rationale:

Expertise about the inter-relations between societies, biodiversity and ecosystem services are richest at the ecosystem and landscape scales. Reaching out to include expertise across knowledge systems, particularly at sub-regional, national and local scales requires organizing the work programme and coordination of activities at regional and sub-regional levels, and reaching out to national and local experts, including indigenous peoples and local communities.

Consequences / Actions for IPBES:

Regional and sub-regional centres of excellence, including those specialized in indigenous and local knowledge, will need to be strengthened or established for the implementation of the work programme.

#### **2.2.9 IPBES at local and national level**

Thesis:

In the work of IPBES knowledge generated at the local and national levels is essential in order to inform decision making at all levels.

Explanation / Rationale:

Relationships between biodiversity, ecosystems and people are place- and area-specific and need to be understood as such. Focus on global and sub-global / regional levels only would eliminate the possibility to understand relevant relationships, trends and responses.

Furthermore, issues related to the decline of biodiversity and ecosystem services and human wellbeing need to be addressed at the local and national levels in order to enable adequate responses.

Consequences / Actions for IPBES:

All work of IPBES to synthesize, review, assess and critically evaluate relevant knowledge needs to include focus on knowledge about relationships between biodiversity, ecosystem services, and people at the local and national levels.

#### **2.2.10 Methods for co-production of knowledge**

Thesis:

Successful co-production of knowledge requires methodologies and methods appropriate to contextualizing local and national outcomes arising from diverse worldviews.

Explanation / Rationale:

Relying exclusively on scientific methods and methodologies will limit understanding of environmental issues from a broader perspective. Applying existing and accepted indigenous methodologies can be synergistic with scientific methodologies as well as address multiple aspects of research and knowledge synthesis.

Consequences / Actions for IPBES:

IPBES should promote intercultural methods throughout its work including through the use of diverse methodologies, development of guidelines and sharing good practices.

#### **2.2.11 Respecting multi-functionality**

Thesis:

Co-produced knowledge must take the multi-functionality of bio-cultural landscapes into account beyond the production of commodities such as food and fibre e.g. environmental and social sustainability, cultural heritage and the production of many other ecosystem services.

Explanation / Rationale:

Typically such understanding of interconnectedness between multiple functions is present in indigenous and local worldviews and is therefore an important element in the co-production of knowledge.

Consequences / Actions for IPBES:

IPBES will produce guidelines on the coproduction of knowledge including the key principles (FPIC, humility, respect, sharing, feedback, etc.).

#### 2.2.12 **Living stories**

Thesis:

Living stories provide significant evidence of the relevance of, and pressing need for, co-production of crucial knowledge on biodiversity and ecosystem services based on diverse knowledge systems.

Explanation / Rationale:

These stories show that co-production has already produced evidence of the importance and viability of such approach.

Consequences / Actions for IPBES:

In the work of IPBES, living stories should be encouraged through guidelines, workshops, video-clips, and best practices can be collated.

#### 2.2.13 **Conflicts between knowledge systems**

Thesis:

If the coproduction of new knowledge leads to different results generated by diverse knowledge systems, these should be presented as such without subsuming the results of one system to the other.

Explanation / Rationale:

The coproduction of knowledge is based on mutual respect and the acceptance of difference. If a joint research project following a commonly defined research question and set of methodologies leads to differing results, there should be agreement to present these results as such. Disagreement on interpretation is an acceptable outcome. In this case co-production reverts to the multiple-evidence base approach.

Consequences / Actions for IPBES:

Assessments might include differing results and interpretations which will be presented side by side.

#### 2.2.14 **Complementary evidence**

Thesis:

Diverse knowledge systems can generate complementary evidence for sustainable management of biodiversity and ecosystem services.

Explanation / Rationale:

Complementary knowledge can create an enriched understanding of the topic, and provide triangulation of different sources of understanding. Further, using multiple sources can contribute to assessments that are reliable across groups of stakeholders and rights holders, and improved implementation of knowledge.

Consequences / Actions for IPBES:

When IPBES is generating assessments it should ask for multiple evidence derived from diverse knowledge systems, including indigenous, local, and traditional knowledge systems. Assessment reports can have different chapters for knowledge generated by diverse knowledge systems which have to be reviewed by different reviewers according to their insight into the respective knowledge system, using a multiple evidence base approach. The procedures for developing a review process should be established in an inclusive and participatory process.

#### **2.2.15 Visibility of diverse knowledge systems**

Thesis:

The role of diverse knowledge systems should be made explicit in all components of the work of IPBES.

Explanation / Rationale:

Diverse knowledge systems have to be made visible if IPBES is serious about its acknowledgement of the contributions of these.

Consequences / Actions for IPBES:

A multiple evidence base approach should be included in the main conceptual framework of IPBES.

#### **2.2.16 Mobilization of existing data and evidence**

Thesis:

Connecting and creating synergies between diverse knowledge systems, for example as suggested in multiple evidence based approach, requires mobilization of existing data and evidence.

Explanation / Rationale:

There is a need among indigenous, local, and traditional knowledge systems to mobilize existing knowledge and understanding on their own terms, according to multiple evidence based approach. This is to secure that knowledge is represented and shared as agreed among knowledge holders.

Consequences / Actions for IPBES:

Resources in terms of financial and technical support should be made available to appropriate bodies representing indigenous peoples and local communities for experts from diverse knowledge systems to develop data bases and consolidated and legitimate syntheses of existing knowledge.

#### **2.2.17 Validation of knowledge**

Thesis:

One knowledge system should not apply its own validation criteria and methods on other knowledge systems as this does not respect the integrity and complexity of diverse knowledge systems.

Explanation / Rationale:

Validation across knowledge systems could have the consequence that knowledge is rejected because it cannot be proven by other systems methods. For example, biocultural systems that are functioning in a sustainable way should be identified and valued, regardless of their validation using science based mechanisms.

Consequences / Actions for IPBES:

Use different and appropriate evaluation methods for knowledge coming from diverse knowledge systems. It is critical to integrate experts from different knowledge systems into the fora that validate existing knowledge (e.g. assessment author teams, scoping teams).

#### **2.2.18 Multiple evidence approach for IPBES**

Thesis:

In order to equally value knowledge generated by different knowledge systems a multiple evidence base approach should be applied in which an agreed set of criteria is used for each knowledge system.

Explanation / Rationale:

Using the same validation criteria for each knowledge system does not respect the specifics of knowledge systems and thus over- or undervalues knowledge from certain systems.

Consequences / Actions for IPBES:

The definition and identification of criteria has to include knowledge holders from the respective knowledge systems. A mechanism is needed to determine these criteria according to a multiple evidence-based approach. Such a mechanism has to be transdisciplinary to include different knowledge systems, including representatives from social (including the humanities) and natural science, as well as local, indigenous, and traditional knowledge systems.

#### **2.2.19 Development of validation criteria**

Thesis:

Criteria and procedures for evaluating knowledge within each knowledge systems should be respected and applied.

Explanation / Rationale:

Required to respect the integrity and complexity of knowledge systems (and knowledge holders) as well as to appropriately represent knowledge. For example, indigenous knowledge can be a formal body of knowledge, acknowledged by leaders and with its own status. The validation should be aligned with the system of learning, i.e. systemic validation mechanisms for a systems-based knowledge system. Different kinds of validation practices could be described as e.g. empirical, procedural, cultural (collective) validation, and moral or ethical validation. Validation in science is mainly based on empirical and procedural methods and we may need to look further into ways of finding procedural validation that recognize diverse knowledge systems, but also the potential and implications of cultural and ethical ways of evaluating knowledge.

Consequences / Actions for IPBES:

Capacity building is needed to strengthen the ability within each community to address validation issues, along with a multiple evidence based approach.

#### **2.2.20 Willingness to share knowledge**

Thesis:

IPBES has to make sure that the knowledge used for assessments is willingly shared by the knowledge holder.

Explanation / Rationale:

It has to be avoided that sacred or secret knowledge is disseminated or knowledge is used against the will of the knowledge holder.

Consequences / Actions for IPBES:

Authors of assessments have to check if available knowledge was gathered under application of free, prior and informed consent before using it.

#### **2.2.21 Gender-specific knowledge**

Thesis:

Failure to acknowledge women's knowledge or gender-differentiated/specific knowledge will lead to an incomplete assessment report

Explanation / Rationale:

Contributions of women knowledge holders and their voice in decision making processes are undervalued and undermined.

Consequences / Actions for IPBES:

IPBES should care about the role of women in traditional knowledge systems in assessments and knowledge generation and put in place mechanisms that ensure gender balance in all components of its work programme.

### **3 Abstracts of presentations**

#### **3.1 Connecting different knowledge systems, Axel Paulsch, PHD**

Institute for Biodiversity Network (ibn)

Axel Paulsch presented the contents of the background paper he had prepared for the workshop (see chapter 2).

#### **3.2 Integrating knowledge systems: experiences from the Arctic, Kári Fanner Lárusson**

Conservation of Arctic Flora and Fauna, (CAFF)

The Arctic Council is a high-level intergovernmental forum that addresses the issues faced by the Arctic governments and the indigenous peoples of the Arctic. It has eight member countries (Canada, Russia, Iceland, Norway, Sweden, United States, Finland and Denmark (including Greenland and the Faroe Islands)) and six indigenous organizations called the Permanent Participants (PP's, The Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Council, Russian Association of Indigenous Peoples Of the North and the Saami). In order for an indigenous organization to qualify as a PP they need to represent indigenous people residing in more than one Arctic state or two or more indigenous groups residing within one Arctic state.

The majority of the work conducted in the Arctic Council is channeled through six permanent working groups each with a different thematic focus. The Conservation of Arctic flora and fauna (CAFF – [www.caff.is](http://www.caff.is)) is the biodiversity working group of the Arctic Council and how Traditional Ecological Knowledge (TEK) is incorporated in its work is the focus of this talk.

The Arctic Council was created in 1996 and was established to address environmental issues within the Arctic. The Arctic council is comprised of the Foreign ministers of the eight Arctic states with administration conducted by the senior Arctic officials composed of high-level representatives from the foreign ministries of member countries. The category of PPs was created to facilitate active participation and full consultation with the Arctic's indigenous peoples within the Arctic Council. PP's operate in a similar manner as countries within the council but do not have the right to vote. The status of the PPs lies between that of member countries and observers to the Arctic Council. This structure signifies an involvement of indigenous peoples in an international body unknown elsewhere.

This cooperation is reflected in the CAFF working group which is tasked with addressing the conservation of Arctic biodiversity through enhancing cooperation among scientists and policy makers thereby facilitating the development of common responses on issues of importance for the Arctic ecosystem such as development and economic pressures, conservation opportunities and political commitments. The CAFF board is comprised of representatives from the eight Arctic states, PPs and observer countries and organizations. A permanent secretariat located in Iceland manages daily operations.

CAFF is working towards shortening the time from detection of changes, reporting and informing appropriate policy responses. CAFF addresses this through:

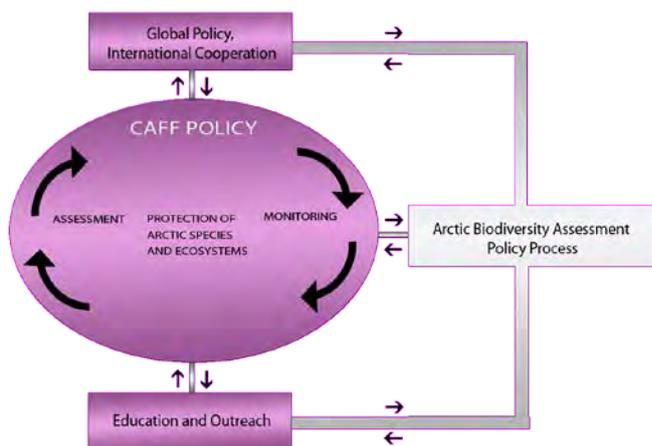
1. The Arctic Biodiversity Assessment (ABA – [www.caff.is/aba](http://www.caff.is/aba)), which is an assessment (Science and traditional knowledge) of Arctic biodiversity which will provide a description of the current state of Arctic ecosystems and biodiversity and create a baseline for use in global and regional assessments of biodiversity. The ABA is scheduled for release in May 2013.
2. The Circumpolar Biodiversity Monitoring Program (CBMP – [www.cbmp.is](http://www.cbmp.is)) will build upon this baseline and coordinated efforts to monitor status and trends of Arctic biodiversity.

3. The Arctic Biodiversity Data Service (ABDS – [www.abds.is](http://www.abds.is)) provides a platform where data is made interoperable and allows for access, integration, analysis and display of biodiversity information for scientists, practitioners, managers, policy makers and others working to understand, conserve and manage the Arctic's wildlife and ecosystems.

This work further helps to generate recommendations to the Arctic Council intended to inform policy response within member countries and ensure the sustainability of the Arctic as well contributing to the various international environmental frameworks and bodies such as the Convention of Biological Diversity and the intergovernmental Group on Earth Observations (GEO).

The PP's are involved in all aspects of CAFF's activities and sit on the CAFF board. TEK coordinators were appointed to facilitate the inclusion of TEK within the ABA. The TEK collected as part of the ABA process is to be published as TEK compendiums which will focus on indigenous observations of change in the Arctic. Two compendiums are planned focusing on Eurasia and North America. The Eurasian version is scheduled for release in late 2013.

PP's participate within the CBMP and have appointed representatives to its various steering groups and activities. To date incorporation of TEK within the CBMP expert networks has been problematic as Community Based Monitoring (CBM) projects are widely distributed without clear integration and a central access point. To address this issue the CBMP in cooperation with the PP's are developing a CBM registry, a meta-database where CBM projects can be registered to facilitate better cooperation, integration and interaction.



**Figure 1: Organizational chart of CAFF**

This cooperation has been successful and valuable. Information from various sources increases the effectiveness of the work of CAFF and the Arctic Council. Inclusion of stakeholders ensures buy in and contributes to CAFF successfully carrying out its mandate. TEK offers valuable insights into biodiversity e.g. identify emerging trends and creating historical baselines. TEK is a dynamic knowledge system based on a close connection to nature and as such reflects the adaptive and resilient nature of indigenous lifestyle in the Arctic.

The sharing of knowledge runs both ways: knowledge holders learn from each other. There are challenges in working with different knowledge systems such as conventional science and TEK which require close cooperation and understanding. The challenge in validation of knowledge is well known among those that deal with the interaction of these knowledge systems. While conventional science uses a formal peer review process the validation of TEK is not as formalized and presents a more challenging prospect. Through the cooperation with the PP's this issue has not hindered the sharing of knowledge but is something that should be kept in mind. Knowledge in the Arctic is at risk as TEK

follows an oral tradition and societal changes within the Arctic have affected the sharing of this knowledge between generations. Also indigenous languages are dying throughout the Arctic and the knowledge they contain often disappears with them.

IPBES provides an opportunity to help address these issues and help facilitate the better inclusion of different knowledge systems.

### **3.3 The Dzanga-Sangha Youth Initiative, Central African Republic (CAR) –“Can IPBES act as an incentive to conserve traditional knowledge?” Tatjana Puschkarsky, Ernesto Noriega**

WWF consultants

The inclusion of traditional knowledge within IPBES has spurred discussion about the possible implications for indigenous peoples and local communities. Through the example of the Dzanga-Sangha Youth Initiative in the Central African Republic, we argue that IPBES processes could potentially act as incentives to strengthen traditional knowledge, especially in cultural contexts where its transmission is being weakened under the pressures of modernization and rapid change.

The transmission of valuable ecological, cultural and historical knowledge among the indigenous communities of Dzanga-Sangha, a protected area in the Congo Basin rainforest, is interrupted due to several reasons: new influences and a more sedentary way of life centered in the villages and away from the forest; increasing alienation between the generations as a result of the discontinuation of cultural practices such as story-telling and communal forest camps; discrimination from the part of a growing settler population; and most importantly, the perception among the young that the knowledge of their elders appears unsuitable for confronting the new challenges facing them.

The Dzanga-Sangha Youth Initiative which is supported by WWF Germany strives to respond to these developments by empowering the indigenous Ba’Aka and Sangha-Sangha youth and their communities to become active protagonists in the protection, promotion, and management of their cultural and natural heritage and in the defense of their rights. It tries to offer a space where the memory and experience of the elders and the curiosity and creativity of the young can come together in order to use time-tested knowledge in innovative ways to confront a rapidly changing world. From the beginning, the initiative has found a very enthusiastic response in the communities and the first exchanges have demonstrated how little it takes to tap into an immense desire to revitalize the transmission of traditional knowledge, and have also shown their strong commitment to not let it disappear. The challenge of course for these youth and elders will be to find ways of rendering their communities’ knowledge relevant - for environmental conservation as well as a potential cornerstone for sustainable community-based development.

In this endeavor, the indigenous communities of the Dzanga-Sangha rainforest will need regional and international partners which help them break through the contempt and discrimination that encircles them today by collaborating in knowledge-based projects that respect and value their competences and expertise. In this sense IPBES could offer a platform to engage in such equitable partnerships which are mutually beneficial to both the local and the international communities. Furthermore, by giving traditional knowledge an opportunity to contribute to environmental understanding and to influence policy in positive ways, it would render it acutely relevant to the solution of today’s local and global challenges. This in turn could make indigenous youth proud of their ecological and cultural knowledge, guarantee their commitment to the continuity of its transmission, and encourage them to promote a more culturally and environmentally appropriate development for their communities.



**Figure 2 Participants of Dzanga-Sangha Youth Initiative**

### **3.4 Mobilizing local knowledge for biodiversity conservation; Olivier Hamerlynck**

IUCN

This presentation tells some stories of how, over the past twenty years, we have been trying to mobilise local knowledge for biodiversity conservation and improved ecosystem service delivery for human well-being. We are now based at the Kenya Wetlands Biodiversity Research Team (KENWEB) and you can follow what we do now on our facebook page

<http://www.facebook.com/pages/Kenweb/254203431354628>

In the foreground you see the area upstream of the dam at the mouth on the Senegal River which stayed green but became a stagnant pool of disease ridden waters totally dominated by reed-mace, in the back ground you see the area that became a saline desert.

In the 1960s we had a normally functioning ecosystem with people fishing during flooding and bringing in livestock during the dry season, hunting and women collecting grasses for mat-making, there was also a lot of mangrove and waterbird breeding colonies.

After the dam was built the downstream part became completely saline and almost devoid of vegetation with a few hundred mangrove trees just hanging on. This prompted two ornithologists who wanted to count waterbirds but found only 3 in the newly created national park to wonder why this dusty saltpan has been turned into a protected area. A few years into the re-flooding it thrived again so it was well worth it. The whole story can be downloaded in more detail at <http://www.atl.org.mx/files/WaterPublications/ParaCuencas/5.pdf>, but basically we went into the field with knowledgeable local people and each time we did a flood release asked them how this compared to the pre-dam situation to adjust the management. It was highly successful with hundreds of thousands of waterbirds, very much improved income for local fishers whose numbers went up from a handful to over a hundred, lots more mat-making with more women earning something but still very

little compared to the work put in and thousands of cattle finding good pasture. The key to all this was an exceptional individual Ahmed ould Chorfa who gradually, over several years, opened up his very extensive local knowledge and also established contact with groups such as the nomadic livestock keepers who are very hard to contact. He was obviously distrustful at first as the dam builders had also used his knowledge to move around in the area saying that the dam would “solve all their problems”. Unfortunately he passed way last year and as, in spite of our insistence, his son was not recruited as a park guide I have heard they the family has migrated to the city.

The second story, describing the development of the research master plan for the Lower Rufiji floodplain and delta hinges less on a particular individual but involved a wide stakeholder consultation to formulate the key issues the local communities wanted to investigate. Again the details of the story can be downloaded at

<http://www.coastalforests.tfcg.org/pubs/REMP%2030%20Technical%20Report%2028%20Research%20Masterplan.pdf>

but following up on the locally designated priority of understanding the functioning of the floodplain lakes we embarked on a programme for the coproduction of knowledge through research and monitoring with village-based teams that has yielded interesting results. An important part was the feedback sessions in which we jointly analysed the data. One important result was that we could show that when the lakes connect their fisheries are much more productive and diverse (therefore more resilient) and that if the dam will be built according to current plans (design flood of 2500 cubic meters per second) many of the lakes will not survive and livelihoods will be severely compromised. Some of these results have been or are being published:

Duvail, S., Mwakalinga, A., Eijkelenburg, A., Hamerlynck O., Kindinda, K. & Majule, A. in press. Jointly thinking the post-dam future: exchange of local and scientific knowledge on the lakes of the Lower Rufiji, Tanzania. *Hydrological Sciences Journal*.

Hamerlynck, O., Duvail, S., Vandepitte, L., Kindinda, K., Nyingi, D.W., Paul, J.-L., Yanda, P.Z., Mwakalinga, A.B., Mgaya, Y.D. & J. Snoeks 2011. To connect or not to connect – floods, fisheries and livelihoods in the Lower Rufiji floodplain lakes, Tanzania. *Hydrological Sciences Journal* 56 (8): 1436-1451.

It has also allowed us to find some incredible talents namely Kassim Kindinda who from fisher became fisheries recorder, then trainer and supervisor of other fish recorders and has now completed a diploma course.

In conclusion: for the stakeholder involvement strategy I think we need to fish widely, both for the documentation of successful processes for knowledge coproduction and for the exceptional individuals that can bridge the various knowledge systems and bring the relevant information forward. Many of us are part of networks both within (e.g. the commissions) and outside of IUCN and we can query knowledgeable practitioners to share their experiences and comment on draft proposals on how to integrate all this into the IPBES workplan. So let’s ask them for their advice and also for finding those individuals that can be nominated to participate in this.

### **3.5 Dialogue processes and a Multiple Evidence Base approach for connecting knowledge systems, Maria Tengö, PHD**

Stockholm Resilience Centre (SRC)

Maria Tengö set out to present the process and outcomes of the Guna Yala-dialogue (see <http://www.dialogueseminars.net/Panama/>) as well as outline the Multiple Evidence Base approach for connecting knowledge systems. The Guna Yala- workshop was part on an ongoing dialogue process

initiated by The Resilience and Development Programme (SwedBio) at the Stockholm Resilience Centre (SRC) and the International Indigenous Forum for Biodiversity (IIFB). Tengö emphasized that there are at least three ways of connecting knowledge systems: integration, where components of one knowledge systems incorporated into another through a validation process; parallel approaches placing knowledge systems next to each other, using separate validation mechanisms and emphasizing complementarity; and co-production of knowledge, where representatives from different knowledge systems are engaging in mutual processes of knowledge generation. In all of them there are some fundamental values that need to be present: respect, trust, reciprocity, equity, and transparency, as well as enabling factors as identified in the Guna Yala dialogue.

The Multiple Evidence Base is currently being developed as a collaborative effort among researchers and representatives from diverse knowledge systems, and with involvement from UNESCO, as a part of the dialogue process, with IPBES as one particular target. The Multiple Evidence Base approach is a parallel approach, where indigenous, traditional, local and scientific knowledge systems are viewed to generate different manifestations of valid and useful knowledge that can contribute to sustainable management of ecosystems – through complementarities as well as new ideas and innovation from cross-fertilization across knowledge systems. Multiple Evidence Base highlights the importance of local and indigenous knowledge systems on their own terms, where evaluation of knowledge as useful and relevant for the issue of investigation occurs within rather than across knowledge systems. Brought together, multiple evidence on an issue (or assessment topic in the IPBES) such as Arctic sea ice dynamics or the role of community conserved areas for maintaining landscape biodiversity, creates an enriched picture of understanding in an assessment process. The enriched picture is also a starting point for further knowledge generation, within or across knowledge systems through cross-fertilization and co-production of knowledge. Tengö presented some examples where a multiple evidence base approach has been applied, including the work of IIFB and Tebtebba on indicators for traditional knowledge in the CBD. Applying a Multiple Evidence Based approach in IPBES requires an inclusive and participatory process for developing procedures for criteria of validation within knowledge systems as well as legitimate ways of scaling up knowledge, methods development, and capacity building among all knowledge holders including scientists.

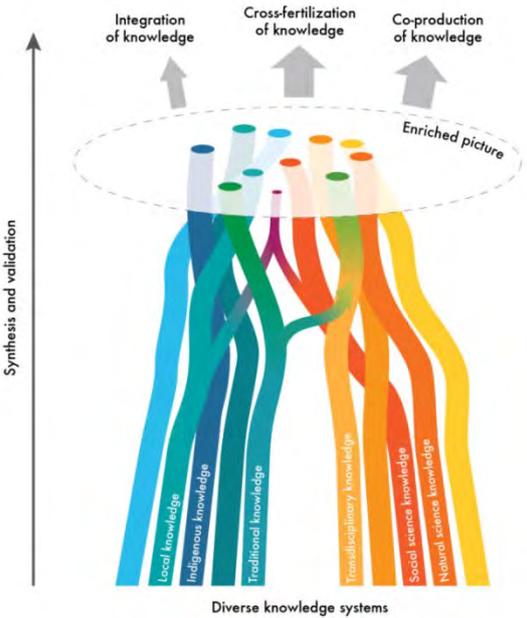


Figure 3: An outline of a multiple evidence base process

### 3.6 Local, Global, and Back Again: Indigenous Knowledge and Scientific Knowledge (Systems) Within IPBES, Georg Peter

The term 'knowledge system' is extensively used within the discussion about biodiversity and ecosystem services. Regarding to the larger debate on rationality and the relativity of interpretation in social sciences and philosophy since the 1980's, I like to make some epistemological remarks by contrasting indigenous and scientific knowledge. Together with the IPBES' Multidisciplinary Experts Panel (MEP) there are three knowledge systems to distinguish: science as a formal knowledge system, traditional knowledge as holistic system, and the MEP as a functional knowledge system.

To start with science or scientific knowledge, it can be characterized as a special form of interpretation. It has: defined categories and elements, is logical, with deductive rules (grammar) allowing conclusions and forecasts, is without contradiction, is inter-subjectively checkable and repeatable, is methodologically and empirically founded. Science can be seen as a *formal knowledge system* which implies that is not attached to a person, place or time. In other words it is universal or general applicable, in some sense free of values and goals, but limited in range depending on the defined vocabulary. It is context invariant or simply abstract. Science makes knowledge transferable. It is not attached to a special life form or society, as long as these accept the idea of science as a formal knowledge system.

That is different to traditional societies. They have a holistic interpretation of the world – mostly interpreted by a priest elite or a leader – where everything and everybody has its place in some cosmological order or narration. Cognitions, values, rights, social and religious knowledge are not separated. TK is significant in multiple aspects. But for contemporary philosophy or sociology the point is, that there is no knowledge *system*. This knowledge – including also tacit knowledge – belongs to or is closely related to a life form (Wittgenstein) or lifeworld (Schütz, Habermas). Which means that changing knowledge can effect a changing society. A *Sociology of Knowledge*, for example, examines how a society manages knowledge (access, tradition a.s.o.), how it is related to their cultural self-understanding (ideology) and what social functions it has. TK is closely related to a lifeform and can only be changed in some limited ranges without changing the lifeform. Like an ecological system which loses its stability after the loss or the import of a single species, some minor changes may have large effects. So in ecological service projects we have to deal with two regulated systems and we have to describe why and how we want to scientifically understand them as systems and how they are related.

Within IPBES a multidisciplinary expert system (MEP) should be established with the function to support political decision making by examining all necessary information. IN principle this is a knowledge system too, because it has to bring together not only different kinds of knowledge but also the interests of the stakeholders, administrative issues of the involved organizations and economical or financial aspects. This means scientific knowledge has to come back from universal to local, from abstract to concrete, from value free to value containing and goal oriented, and from segmented to holistic. While science validates (its small range of) the 'facts', the MEP has to evaluate or balance all relevant interests, rights, and standards. For example, the interests of traditional knowledge holders are affected within the IPBES' MEP at least in three different ways: as legal rights holders, as stakeholders and as cooperative partner by the realization of the services within the local ecocultural system.

Within the MEP, sociological or ethnological knowledge is useful in three ways: first, helping to get an appropriate – also in means of moral and respect – access to IK by analyzing the management of knowledge and the social system. And second and more important, by analyzing the acceptance a service project might have at the side of the indigenous people as a cooperation partner; and third its consequences or impact on the indigenous group or society. As a social risk or technology assessment this is the equivalent to the biological examination of the ecosystem.

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at the International Academy for Nature Conservation, Isle of Vilm, Germany

Foto: Cornelia Paulsch (ibn)