

Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production

21th to 25th January 2019 • Chiang Mai and Chiang Rai, Thailand
Workshop report

ORGANISERS:

SwedBio
A programme at Stockholm Resilience Centre



Table of contents

List of acronyms	4
Preface	5
Acknowledgements	5
Executive summary	6
Introduction	8
Methods for the multi-actor dialogue approach and MEB in practice	10
Day 1: Setting the scene for the Dialogue	12
Introductory Session to the Dialogue	12
Free Prior and Informed Consent (FPIC) for knowledge shared and generated in the Dialogue	12
Session 1: Introduction to IPBES, assessment methodology, and connecting knowledge system	13
Introduction to the IPBES	13
IPBES and Indigenous and Local Knowledge Systems	15
Discussion	15
Assessment process and ILK	16
Introduction to connecting knowledge systems based on equity, reciprocity and usefulness for all involved, and the Multiple Evidence Base approach	17
Session 2: Sharing experiences of ILK holders contributing to IPBES pollination assessment	20
Brenda Tahi and Atamira Tumarae, Tuhoe Tuawhenua Trust, Aotearoa/New Zealand	21
Ruth Spencer, GEF Small Grants Programme (GEF SGP) and MEPA Trust, Antigua and Barbuda	22
Simone Athayde, University of Florida and Federal University of Tocantins, US/Brazil	22
John Lengoisa, Ogiek Peoples' Development Program (OPDP) Kenya	23
Elmer González, Fundación para la Promoción del Conocimiento Indígena (FPCI), Panama	23
Edgar Pérez, Fundación para el desarrollo rural Junej T'inam, Guatemala	24
Julio López Maldonado, Universidad de San Carlos de Guatemala, Guatemala	24
Thingreiphi Lungharwo, Naga Women Union, India	25
Session 3: Presentation on the main findings of the IPBES Pollination Assessment	25
What are pollinators and why are they important?	25
Summary of Assessment Findings: Values of pollinators	26
Summary of Assessment Findings: Status and Trends of Pollinators	27
Summary of Assessment Findings: Risks and Responses for Pollinators	27
Session 4: Discussions of key messages and local experience	27
On pollination values	27
On status and trends of pollinators	28
On risks and responses for pollinators	28
Plenary discussion on values, status and trends, and risks and responses	29
Session 5: Introduction to the Hin Lad Nai community	29
Day 2: Walking workshop to the northern catchment forest, Hin Lad Nai	32
Session 1: Welcome to Hin Lad Nai and inauguration	32
Session 2: The walk to the watershed and the old forest	34
Summary of discussions in the four groups during the walk to the watershed	35
Summary of discussion on key messages on values during the walk	36
Session 3. Introduction to the network of Centres of Distinction on ILK	39

Day 3: Walking workshop to the fallow areas	41
Session 1: Plenary before the walk, reflecting on outcomes of day 2	41
Session 2: The walk – rotational farming knowledge, practice and spirituality for biodiversity, pollinators and food security	42
Summary of discussions on risks and responses held in the fallow area	44
Summary of discussion on status and trends of pollinators	47
Summary of plenary discussions reporting back from the walking workshop	51
Cultural evening	52
Day 4: Ways forward for pollinators, pollination and the people and landscapes nurturing them	53
Session 1: Discussions on uptake and ways forward	53
Pathways of the Hin Lad Nai community	54
Session 2: Discussion on opportunities for international outreach and impact	56
Diversity of pathways at local level	57
Closing ceremony	59
Organisers' conclusions	60
Key references	64
ANNEX I. Dialogue agenda	65
ANNEX II. Participants list	68
ANNEX III. Summary of Dialogue evaluation from participants	70
ANNEX IV. FPIC, as signed by participants	71
ANNEX V. International Seminar at Chiang Mai University, Friday 25th January 2019	73

List of acronyms

CESD	Centre of Ethnic Study for Development	IPBES	Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services
CSIRO	Commonwealth Scientific and Industrial Research Organisation	IPLC	Indigenous Peoples and Local Communities
CBD	Convention on Biological Diversity	IPO	Indigenous Peoples Organizations
CBMIS	Community Based Monitoring and Information Systems	LBO	Local Biodiversity Outlooks
CMU	Chiang Mai University	MEB	Multiple Evidence Base
FAO	Food and Agriculture Organization of the United Nations	MEP	Multidisciplinary Expert Panel
FPIC	Free Prior and Informed Consent	PASD	Pgakenyaw Association for Sustainable Development
FPP	Forest Peoples Programme	POINT	Promotion of Indigenous and Nature Together
GBO	Global Biodiversity Outlook	SPM	Summary for Policymakers
ICCAs	Indigenous and Community Conserved Areas and Territories	SRC	Stockholm Resilience Centre
ICIP	Indigenous Cultural and Intellectual Property	TK	Traditional Knowledge
IIFB	International Indigenous Forum on Biodiversity	TSU	Technical Support Unit
IIFBES	International Indigenous Forum on Biodiversity and Ecosystem Services	UNDP	United Nations Development Programme
ILK	Indigenous and Local Knowledge	UNEP	United Nations Environment Programme (UN Environment)
ILKP	Indigenous and Local Knowledge and Practices	UNESCO	United Nations Educational, Scientific and Cultural Organization
ILKS	Indigenous and Local Knowledge Systems	UN DRIP	United Nations Declaration on the Rights of Indigenous Peoples
IMPECT	Inter Mountain Peoples Education and Culture in Thailand Association		

Preface

This report is a summary of the Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production that was held 21st to 25th January 2019, in Chiang Mai and Chiang Rai, Thailand. The Dialogue was co-convened and jointly designed by the Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT) and Pgakenyaw Association for Sustainable Development (PASD) together with SwedBio at the Stockholm Resilience Centre and UNESCO Natural Science Sector and the Karen community of Hin Lad Nai, who were also the local host for the walking workshop and dialogue in their community.

It summarises the presentations and discussions during the Dialogue, which revisited selected key messages from the IPBES Assessment on Pollinators, Pollination and Food Production (Pollination Assessment hereafter). The aim was to provide feedback and reflect on key messages of relevance with Indigenous and local knowledge (ILK) holders and experts on pollinators and pollination that contributed to the Assessment, with their ILK case examples, or as authors. In doing so, the Dialogue also aimed to contribute to

methodological guidance and developments for IPBES procedures and approaches to work with ILK.

Another aspect of the Dialogue was to contribute to, and link Karen ILK to the science-policy interface, as part of an effort to strengthen the respect and recognition of the Karen rotational farming practices, and their contributions to conservation and sustainable use of biodiversity, and wellbeing of the Karen people.

Further, the Dialogue was held as a contribution to support the uptake of the IPBES Pollination Assessment in local, national and international policies. The Dialogue practiced and further explored a Multiple Evidence Base approach, where Indigenous, local and scientific knowledge systems are seen as equally valid and contributing useful knowledge for ecosystem governance. It used an interactive “walking workshop” method, facilitating participants to interact through the Karen forest and rotational farming landscape, and articulate their common experiences around pollinators and pollination, as a way to enable dialogue.

Acknowledgements

We wish to thank the Hin Lad Nai elders and leaders who generously shared their wisdom about their forest and rotational farming landscape with the visiting ILK holders, scientists and representatives for organisations caring for pollinators, pollination and food production, and the diversity of knowledge systems from all around the world. We also want to thank the whole Hin Lad Nai community, for their hospitality and all their openness and support. We also thank CSIRO, Australia, for in kind contributions to the Dialogue, including the poster

development, and the Centre of Ethnic Study for Development (CESD), Chiang Mai University, for arrangements and logistics during the International seminar and IPBES uptake day at Chiang Mai University 25 January. The project was financed by support from the Swedish Development Cooperation Agency (Sida) through SwedBio at the Stockholm Resilience Centre. The Swedish Research Council [VR 2015-03441] contributed travel support for researchers.

Executive summary



The walk to the watershed brought the group to a large tree remaining as a living memory of the forest surrounding Hin Lad Nai which was largely destroyed during the logging concession period in the 1980's. Photo: J. Bumroongchai

THIS REPORT presents the main outcomes of a Dialogue across Indigenous¹, local and scientific knowledge systems that revisited and reflected on the key messages derived from the Assessment Report on Pollinators, Pollination and Food Production of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). The Dialogue was hosted from the 21st to the 25th of January 2019 by the Karen community of Hin Lad Nai, Chiang Rai, Thailand, and it was co-convened and jointly designed by the Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT) and Pgakenyaw Association for Sustainable Development (PASD) together with SwedBio at the Stockholm Resilience Centre and UNESCO Natural Science Sector. The Dialogue brought together 52

participants from 19 countries, including ILK holders, ILK experts and scientists engaged in the IPBES Pollination Assessment, together with local Indigenous pollinator experts, and representatives from a number of local, national, regional and global institutions and UN agencies.

The Dialogue was designed using a walking workshop approach in the forest and rotational farming fields of Hin Lad Nai, guided by Karen elders and pollination experts from the community preceded and followed by dialogue with scientists and policy makers. In the field, participants revisited, reflected and jointly analysed selected key messages of the IPBES Pollination Assessment, drawing on their deep insights, experience and evidence from their respective Indigenous and scientific knowledge systems. These methods, following a Multiple Evidence Base approach, were designed to ensure equity, reciprocity and usefulness for all involved, and to promote trust for intercultural sharing, learning and knowledge co-production. Posters presenting the key messages were used as boundary objects linking across diverse knowledge systems.

1. In this report we follow the accepted convention in the Pacific region of upper case for Indigenous, in accordance with Johnson, J.T. et al. (2007) Creating anti-colonial geographies: Embracing indigenous peoples' knowledges and rights. *Geographical Research* 45 (2), 117-120., while recognising the global convention to use lower case.

The Hin Lad Nai community provided an excellent example of how pollinators and their habitats are promoted in a diverse landscape mosaic, and how bees and honey are a central part of reciprocal human-nature relationships underpinning spiritual, cultural, economic, and physical well-being. Similar examples of pollinator-friendly practices embedded into Indigenous landscape management and farming were shared by ILK holders from Panama, Guatemala, Antigua and Barbuda, New Zealand, Kenya, India, the Philippines and Myanmar. The Dialogue participants emphasised the importance of protecting diversified farming systems through the recognition of rights and tenure as well as strengthening customary governance based on ILK. This way, pollinators are supported as part of nature's contribution to people and community wellbeing at large.

Participants appreciated that there were many aspects of critical importance from the perspectives of ILKS included in the Summary for Policymakers of the Pollination Assessment, and its key messages. In general, participants acknowledged the effort made by IPBES in recognising the contributions of Indigenous peoples and local communities (IPLCs) to support and conserve pollinators throughout the planet. They also made a number of recommendations to improve and solidify the process in which IPBES engages with ILK in future assessments and uptake activities.

A general observation, while discussing the Pollination Assessment, was that in ILKS, pollination is often not articulated as a phenomenon as such, but rather understood as one critical link between plants, animals and people in a wider holistic understanding. The discussions in the Dialogue suggested that the framing of key issues around pollinators and pollination, and responses to those, would put more emphasis on relational values, stewardship, ethics and notions of reciprocity and respect for the natural world.

As a reaction to the loss of pollinators, a very strong message came out from the discussions – the importance of supporting the diversified farming systems, adaptive management practices, livelihoods, good governance and diverse knowledge systems that are supportive of pollinators and pollinator habitats. A clear message, from the Pollination Assessment as well as Dialogue participants, is that these systems are in decline and threatened, and should be strengthened. In this respect, tenure security and rights, which are fundamental to securing the continuation of those pollinator friendly practices are often inadequate or missing. The Pollination Assessment's recognition of tenure rights as a critical issue to maintain diversified, pollinator friendly agricultural systems, along with the ability to determine one's own agricultural and food policies was well received and appreciated.

In the discussion on understanding conditions and trends for pollinators – many participants saw potential in sharing their data and observations, including to use technology, such as smartphones, to report data in a way that is mutually

agreed. The Local Biodiversity Outlooks, that is a platform for IPLCs to contribute their own achievements to the CBD Strategic Plan and Aichi Targets, is one opportunity for IPLCs to share their data and monitoring.

The importance of taking advantage of synergies between conservation and customary livelihoods and practices was repeatedly stressed, in particular, with the “Special Cultural Zone” status of Hin Lad Nai as a good example of a first step in this direction. It was highlighted that protected areas would benefit from maintaining and strengthening customary governance and cultural practices.

The Dialogue concluded by outlining a number of pathways to ensure uptake of the Assessment findings and in particular emphasising the contributions made by IPLCs with their knowledge and practices, and through biocultural approaches to global pollination conservation and management.

On the last day, an international seminar and IPBES uptake event was convened at Chiang Mai University (CMU), in collaboration with the Centre of Ethnic Study for Development (CESD) at CMU, to present the main findings of the Pollination Assessment. The Thai government officials provided the types of policy and action being taken in support of the Assessment. The policymakers appreciated the dissemination of the outcomes of the Dialogue to a broad range of stakeholders in Thailand, including academics, Indigenous organisations, environment organisations, government officials and UN agencies.

The Dialogue and the seminar events were an experiment in connecting the assessment's relevance and possible uptake in policy and practice at three levels at once: local, national and international. We conclude that it is possible to create this relevance at the local level, in ways that also have implications for national decision-making and international forums and processes. However, implementing the key messages of the SPM and reversing the serious decline in pollinators worldwide, will require interconnected changes in behaviour, policy, and practice across the diversity of structures and scales where policy and decision-making take place at different scales. The final discussions of the Dialogue brought forward the need for transformations: first of food systems towards sustainability; second of how biodiversity conservation practices views and engages with IPLCs; and third of the relationships between knowledge systems for ecosystem governance towards respect and collaboration. Shifting societies' relationship with nature, one of the key messages in the SPM suggests, is fundamental to all three. Furthermore, as this report and the dialogue strongly demonstrate – considering the togetherness of nature and culture is a critical component of this paradigm shift, offering synergies for biological and cultural diversity, ecosystems and human wellbeing at large.

Introduction



A field in the first fallow year, *hsgif*, after the farming year, *quv*, in the hills surrounding Hin Lad Nai. A bamboo hut is traditionally built for resting during the long working days in the field. In last years, bee hives have been placed in the *hsgif* and the *quv*. They have been found to be appreciated by the bees, and give rich harvest of honey. Photo: P. Malmer

THE IPBES Assessment Report on Pollinators, Pollination and Food Production (Pollination Assessment hereafter) was the first IPBES thematic assessment, and is largely viewed as the first pilot of the procedures for working with Indigenous and local knowledge (ILK) in a global environmental assessment. As such, it made important steps in advancing inclusion of diverse knowledge systems, contributing to IPBES' role in progressing the frontiers of sustainability science. Nevertheless, some gaps occurred in working with ILK during the Pollination Assessment. These gaps related mostly to allowing ILK holders not only to contribute their knowledge, but also to follow their contributions through into synthesis of the key messages, and assignment of confidence levels. The time pressures on the initial assessment made it difficult to complete the processes of science-ILK dialogue through the full assessment cycle.

The pilot of ILK in the Pollination Assessment occurred before the IPBES Plenary adopted its formal *Approach to recognising and working with indigenous and local knowledge in the Intergovernmental Science-Policy Platform*

on Biodiversity and Ecosystem Services.² The approach notes the need to appropriately engage IPLCs in the review, and the relevance of conducting global and local dialogues, web-based consultations, literature and geo-spatial data compilations, fine-tuning of questions, and using diverse media to portray the knowledge, practices, world views, voices and faces of IPLCs.

With this background, at the IPBES 5th Plenary in Medellín, Colombia, the idea came up of revisiting the key messages and outcomes derived from the Summary for Policymakers (SPM) of the Pollination Assessment, together with the holders of ILK that contributed to the Assessment, and some of the assessment's authors. A dialogue across knowledge systems based on equity, reciprocity and usefulness for all involved, was also seen as an opportunity to pilot tools that address some of the challenges identified in the IPBES Approach for working with ILK. Such reviewing

2. Annex II to decision IPBES-5/1



In a walking workshop, participants, local and visiting, share knowledge and insights while walking through the landscapes. Discussions are situated in and around the forest and fields that constitute the landscape. Unlike more formal workshop settings, being outside, visiting fields and other sites enables the participants to get real impressions, exchange practical knowledge and respond to ideas. The host community is the expert, guiding and deciding where to walk. Here participants are on their way to the Hin Lad Nai rotational farming areas, where pollinators are thriving. Photo: D. Crimella.

and reflection provide a stepping stone for the knowledge-policy interface which follows each assessment. It was also discussed how the outcomes of the IPBES Pollination Assessment could be taken up and brought forward in policy for the benefit of Indigenous peoples and local communities (IPLCs) and their contributions to protect pollinators and generate pollinator habitats.

Those who started to discuss the idea in Medellín were initially a group of scientists and ILK holders engaged in the IPBES Pollination Assessment, together with representatives from the ILK Centres of Distinction, UNESCO with the IPBES ILK TSU and SwedBio at the Stockholm Resilience Centre.

The Dialogue culture that the process has built on since then, are coming from a growing learning platform and network across knowledge systems that have evolved through a series of dialogues for connecting across diverse knowledge systems, starting from the pioneering Guna Yala Dialogue³ (Usdub, Panama 10-13 April, 2012). The goal in Guna Yala was to discuss how different knowledge systems could be better connected. The experiences and methods coming out from the series of dialogues after that have proven to be useful in many contexts for bringing together actors to share knowledges and experiences on equal level, built on confidence and trust.

The community of Hin Lad Nai, that so warmly welcomed the participants on their lands, has been engaged in mobilising their knowledge over long time, as a pathway to recognition of Karen peoples' rights to their culture and territories. They have been part of piloting the Multiple

Evidence Base approach, which sees diverse knowledge systems as equally valid contributions to sustainable governance of biodiversity. They were proud to be able to share their knowledge and experiences from managing their Karen rotational farming system, in a way that benefits not only pollinators and pollination, but also biodiversity conservation at large. The community then also hoped that hosting the Dialogue could contribute to strengthen the respect and recognition of Karen culture and the wellbeing of their people.

Thus, the Dialogue had multiple objectives:

1. To revisit key messages from the IPBES Assessment pollination, in order to provide responses, identify gaps that remain, and examine knowledge-policy interface opportunities related to Indigenous and local knowledge on pollinators and pollination.
2. To contribute to methodological guidance developments for IPBES procedures and approaches to work with ILK.
3. To contribute and link Karen ILK to the science-policy interface, as part of an effort to strengthen the respect and recognition of the Karen rotational farming system, and its contributions to conservation and sustainable use of biodiversity, and to the wellbeing of the Karen communities.
4. To support the uptake of the Pollination Assessment in local, national and international decision-making and policy.

The report provides an overview of the Dialogue process, and the reflections and outcomes of each step, and finally the organisers conclusions on to what extent each of the four objectives were achieved.

3. <https://swed.bio/multiactor-dialogues/guna-yala-dialogue/>

Methods for the multi-actor dialogue approach and MEB in practice

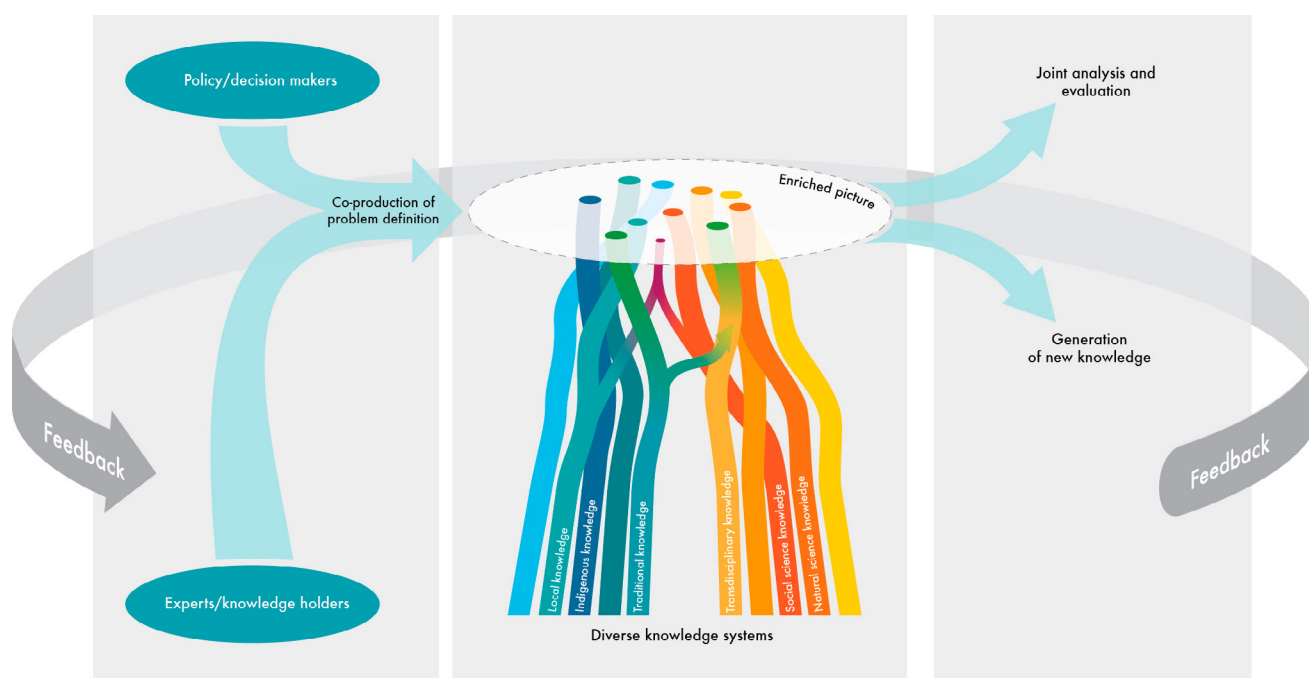


Figure 1. The Multiple Evidence Base Approach. Tengö et al. 2014. The MEB approach is developed to facilitate respectful and constructive interconnections across knowledge systems based on equity, reciprocity and usefulness for all involved.

TO DELIVER on the set of objectives, the Dialogue was carefully planned to create conditions for equity, reciprocity and usefulness for all involved. This is embedded in a Multiple Evidence Base (MEB) approach⁴ developed to facilitate respectful and constructive interactions between knowledge systems. The MEB approach is further explained below, but in brief the MEB approach emphasises integrity of each knowledge system, complementarity across knowledge systems, and joint processes for problem definition and analysis of convergence, divergence, incommensurability and synergy between difference sources of evidence. Figure 1 gives an outline.

To implement a MEB approach, our dialogue design built on the following components:

- The “Multi-actor Dialogue Seminar Methodology”, used as a basis for SwedBio dialogues in different contexts⁵. The method includes a thorough process of consultations and interviews regarding aim and agenda – the Dialogue starts from day one in the planning process for ownership with the diverse actors involved.

- Free Prior and Informed Consent (FPIC) that applies to research or knowledge-related interactions between Indigenous peoples and outsiders⁶.
- Walking workshop methodology, actively interacting and engaging in the landscape, guided by local experts⁷.
- The use of boundary objects, knowledge tools to facilitate interactions between diverse actors from different knowledge systems⁸.

The workshop was jointly planned among the organisers in good time before the event, and regular Skype meetings were held between SwedBio, PASD, IMPECT, UNESCO and CSIRO. The planning process included consultations with the Hin Lad Nai community through PASD, and included thorough discussions on conditions for equal participation from different knowledge systems, agreements on objectives, and the practical challenges. International participants stayed

4. See: <https://swed.bio/stories/a-multiple-evidence-base-approach-for-equity-across-knowledge-systems/>

5. See: <https://swed.bio/focal-areas/approaches/dialogues-learning/multiactor-dialogues/>

6. See for example: <http://www.fao.org/indigenous-peoples/our-pillars/fpic/en/>

7. See earlier walking workshop reports, for example: <https://swed.bio/reports/mobilisation-of-indigenous-and-local-knowledge-for-community-and-ecosystem-wellbeing/>

8. Read more: Zurba, M., Maclean, K., Woodward, E., and Islam, D., 2018. Amplifying Indigenous community participation in place-based research through boundary work. *Progress in Human Geography*:030913251880775.



Figure 2. The IPBES Assessment process showing the steps to recognise and include Indigenous and Local Knowledge (ILK). Dialogues across knowledge systems, such as the one occurred at Hin Lad Nai, are important throughout the IPBES assessment cycle. A dialogue is required by IPBES in Phase 1 (Request and scope) and two further dialogues in Phase 3 (Expert evaluation of the state of knowledge). The Hin Lad Nai dialogue was targeted to Phase 4 (Use of final assessment findings), where IPBES encourages support from strategic partners. Careful design to facilitate respectful and constructive interactions and conditions for equity, reciprocity and usefulness for all involved, as embedded in a Multiple Evidence Base (MEB) approach, is needed. Source: Steps from Annex II to decision IPBES-5/1, diagram adapted by C. Adem, R. Hill and J. Smith. See also Figure 3, page 16.

in touch with organisers for preparation of their contributions and interaction.

The core part of the workshop was held in the forested community of Hin Lad Nai, where the visiting participants were hosted by different families in the village. The draft FPIC agreement was shared in English and Thai and discussed upon arrival in the village before all participants signing the document. More details can be found below (Day 1, Introductory session). Each day, the participants were divided into groups and walked through the biocultural landscape of Hin Lad Nai, with forest gardens and rotational farming fields, each group guided by local experts on bees and pollination. Thus, the visiting participants were embedded in the manifestation of the local Karen knowledge system, and had opportunities to experience and develop their understanding of the landscape through discussions with the guides. The experiences from walking together provided a setting for inquiry, sharing of related or

contrasting knowledge from diverse parts of the world and innovative thinking. Furthermore, it provided the foundation for probing and discussing selected key messages from the Pollination Assessment. Here, posters with printed messages in English and Thai were used as “boundary objects” for the conversations across knowledge systems to connect with the diverse audiences and help to amplify Indigenous participation and engagement with knowledge coming from the IPBES assessments.

The posters were brought during the walk, and each group sat down with copies of the poster in the forest or rotational farming field. Unlike more formal workshop settings, being outdoors, visiting sites relevant for the discussion and with strong presence of highly esteemed ILK holders, enabled those participants that were guests in Hin Lad Nai a more comprehensive understanding of the Karen knowledge system, what it meant in practice, and how it connected to their own knowledge and understanding.

Day 1: Setting the scene for the Dialogue

For the first day of the Dialogue, the host organisations PASD and IMPECT had invited their guests from diverse knowledge systems from around the world to gather in their joint office. A Karen elder led the traditional welcome ceremony. After a prayer, participants were invited to receive a cotton thread to be tied around the wrist, with a prayer for each participant that they will be granted a long life. Good spirits were then invited into the room, and the doors to the room closed as a signal that the rituals to ensure spiritual safety were complete. The ceremony was followed by an introductory round among participants.

Introductory Session to the Dialogue

Pernilla Malmer, Senior advisor at SwedBio and SRC, and part of the organisers team, presented the objectives and the background to the Dialogue (see Introduction). She gave a historical overview of how the flow of the Dialogues for connecting across diverse knowledge systems has evolved in a growing learning platform and network. The work started with the Guna Yala Dialogue⁹ (Usdub, Panama April 2012), where the goal was to discuss how different knowledge systems could be better connected.

After introducing the background and agenda, Pernilla Malmer presented some house-keeping rules for the Dialogue, such as listen actively (e.g., follow flows and focus of conversations), to ask for your turn to speak, to respect time, and not to use the telephone, text or send e-mail in the meeting room or during the walks. In particular, during the time the Dialogue is ongoing, no information from the Dialogue should be shared on social media. She stressed that trust is one the key elements when working across knowledge systems, and to contribute to building trust would be key among participants.

Free Prior and Informed Consent (FPIC) for knowledge shared and generated in the Dialogue

Pernilla Malmer then opened the discussion about FPIC by noting that it is intended that the Dialogue be built on equal sharing and joint learning across knowledge systems and cultures. The aim being to create an environment where people feel comfortable to speak on equal terms as an important precondition for a true dialogue. FPIC applies to research or knowledge-related interactions between

Indigenous peoples and outsiders. There may be information shared during the Dialogue which the holders or the overall community considers sensitive, private or holding value for themselves and which they do not want to share into the public domain. On the other hand, all participants want the reflections and outcomes of the Dialogue to be distributed and inspire actions that are mutually beneficial for all. We all want everyone to feel safe and free to share.

It was explained that the FPIC sought here concerns all sharing of the knowledge from IPLCs during and after the Dialogue. The following important features was emphasised to support a transparent and trustful process: Firstly, equality of all participants and absence of coercive influence – no one person's perspectives or opinions are more important than another's; second, to listen with empathy and seek to openly understand each other's viewpoints; and third, bring assumptions into the open. Moreover, it was important to discuss where and how the learning and information will travel after the Dialogue workshop. Pernilla Malmer explained that there will be a report produced from the Dialogue, including photos. Everyone is invited to contribute to the report. A draft of the report will be circulated in English to all workshop participants for review, comment and approval. The photos in the report will also be circulated for approval of those who are visible.

After this introduction of the context for the FPIC, Pernilla Malmer read out a draft prepared beforehand by organisers. Participants were invited to improve it together and make sure there is agreement. It was also stated that this FPIC applies to the four days Dialogue in Hin Lad Nai, but for the public seminar at Chiang Mai University on Friday, people will be free to share information, including through social media.

9. <https://swed.bio/multiactor-dialogues/guna-yala-dialogue/>



Through the Dialogue, posters with printed messages in English and Thai were used. The different posters presented IPBES and the key messages from the Pollinator Assessment which the group discussed, and served as “boundary objects” for the conversations across knowledge systems. Here Ro Hill explains the structure of IPBES. Photo: J. Bumroongchai

There was an open discussion with regards to what the groups are actually doing when sharing knowledge in this setting and what are the associated benefits and risks. Participants noted that the element on “informed consent” is about what each person shares and about everyone agreeing that the experience of sharing is something that brings benefits to each of us. The FPIC should thus help to articulate a common understanding about how the group can build trust and create conditions where all participants feel that they benefit from sharing. On the other hand, there may be information shared during the Dialogue which the knowledge holders, or the community that holds the collective knowledge, considers sensitive, private or of special value and which they do not want to share. In particular, they may want to be sure that their knowledge will not be passed into the public domain. Beyond all this, how can an FPIC become a “real agreement” rather than just ticking a box? A suggestion was made that the FPIC could be seen as a basis for joint learning through the Dialogue, as something more relaxed rather than a binding agreement that focuses on getting the signatures on the dotted line. However, there are protocols and ethical guidelines that scientists as well as organisers are expected to follow – and that the Dialogue is committed to live up to.

An Indigenous participant stated that what he means when he mentions knowledge, is not “his individual knowledge” but rather knowledge that is collectively held by his community. His people have collected their knowledge for many centuries. This needs to be visible in the FPIC document. ILK should be valued as a collective form of knowledge rather than individual knowledge. Knowledge in

Hin Lad Nai is also collective. ILK should be, and is, practiced and part of the general education of Indigenous children so that it is not lost for next generations. This is the insight to bring to future generations.

As a follow-up from this discussion, the FPIC agreement was adjusted according to the suggestions from the participants. The document was then read out in Thai and discussed again on arrival to Hin Lad Nai the following day, and signed by all participants (see Appendix IV).

Session 1: Introduction to IPBES, assessment methodology, and connecting knowledge systems

Introduction to the IPBES

Rosemary (Ro) Hill gave the group a thorough introduction to IPBES, its procedures and assessments. Ro Hill was one of the Coordinating Lead Authors of the IPBES Pollination Assessment, and a member of the ILK Task Force of IPBES. She is a researcher based at CSIRO in Australia, working in the field of collaborative environmental governance with a special focus on Indigenous approaches. She has been part of organising the Dialogue and together with colleagues at CSIRO has prepared 14 posters (available at <https://research.csiro.au/multipleknowledges/>) about IPBES and the pollination assessment to support knowledge sharing and discussions during the Dialogue.

Ro Hill gathered participants at the front of the meeting room to present two posters, one in English and one in Thai, explaining what IPBES is. IPBES was established in 2012 by a resolution of the UN General Assembly. As any

Box 1. IPBES definition on ILK, IPBES categories of ILK-holders, ILK-experts and Experts on ILK (Decision IPBES 5/1, Annex II)

The approach is based on the following understandings of key terms, concepts and categories:

- (a) **Indigenous and local knowledge systems** are in general understood to be dynamic bodies of integrated, holistic, social and ecological knowledge, practices and beliefs pertaining to the relationship of living beings, including people, with one another and with their environments. Indigenous and local knowledge is grounded in territory, is highly diverse and is continuously evolving through the interaction of experiences, innovations and various types of knowledge (written, oral, visual, tacit, gendered, practical and scientific). Such knowledge can provide information, methods, theory and practice for sustainable ecosystem management. Many indigenous and local knowledge systems are empirically tested, applied, contested and validated through different means in different contexts;
- (b) Maintained and produced in individual and collective ways, indigenous and local knowledge is at the interface between biological and cultural diversity. Manifestations of indigenous and local knowledge are evident in many social and ecological systems. In this context, the approach understands “biocultural diversity” as biological and cultural diversity and the links between them;
- (c) The approach does not intend to create or develop new definitions of what constitutes “indigenous and local knowledge” or “indigenous peoples and local communities”, as these definitions are often context specific and vary within and across regions;
- (d) **Indigenous and local knowledge holders** are understood to be persons situated in the collective knowledge systems of indigenous peoples and local communities with knowledge from their own indigenous peoples and local communities; **indigenous and local knowledge experts** are understood to be persons from indigenous peoples and local communities who have knowledge about indigenous and local knowledge and associated issues (they may also be indigenous and local knowledge holders); and **experts on indigenous and local knowledge** are understood to be persons who have knowledge about indigenous and local knowledge and associated issues, not necessarily from indigenous peoples and local communities

organisation, it has people and structures. At the core is the IPBES Plenary is the governing body and it is composed of member states. As of January 2019, 133 states are members. Ro Hill further explained that there are also expert groups and taskforces which carry out work set by the Plenaries. The members of these are nominated by governments and relevant organisations and approved by the Plenary. They are mainly scientists and some experts on ILK. It is possible for ILK holders and ILK experts (see Box 1) to be nominated, but it has been difficult to get the groups balanced across disciplines (e.g. including more social scientists) and diverse knowledge systems. This is something IPBES is still struggling with. There is an ILK Task Force, and an ILK Technical Support Unit hosted at UNESCO’s Small Islands and Indigenous Knowledge Section.

If you want to engage in the IPBES, it has a formal stakeholder mechanism, which is a set of groups of interested people who are formally recognised in IPBES. In the IPBES Plenary, stakeholders can speak but cannot vote for example concerning approval of IPBES work plans or assessments. IPBES also recognises self-organised networks of stakeholders. There is the Open-Ended Network of Stakeholders, as well as the International Indigenous Forum on Biodiversity and Ecosystem Services (IIFBES), which is established by IPLCs and convenes their Caucus during the IPBES meetings. Both these networks welcome IPLCs. It is also possible to be an observer to the IPBES. Observers are non-state member including the Convention on Biological

Diversity (CBD) and other biodiversity conventions and United Nations bodies, such as UNEP, UNDP, UNESCO and FAO, but can also be other organisations. Observers are allowed to organise activities to support uptake of assessments, and to participate in the plenary.

A participant asked what was the role of the Stockholm Resilience Centre (SRC) in IPBES, and it was explained that SRC is organising this Dialogue through SwedBio and is an observer to IPBES. This serves as an example of how any organisation can apply to be observer. So, to be part of a recognised stakeholder group or to be a registered observer are two ways to engage with IPBES, and its plenaries in particular. The process of who becomes authors of specific assessments is different.

The group reflected upon this information. One Indigenous participant suggested that the idea of IPBES is not to validate ILK, as this is already validated by the ILKS it belongs to.

“Now when we see the structure of the IPBES we understand more about the importance of ILK – of demonstrating its application – that it works – it doesn’t matter whether the scientific knowledge agrees or not – we will demonstrate that it works”.

From participants involved in the IPBES it was clarified that IPBES is an intergovernmental body and that the assessments and the knowledge they synthesise should be independent and based on the best knowledge available. However, the key

Section of the IPBES Approach	Practices for working with ILK in assessments of biodiversity and ecosystem services
Supporting care and mutuality	
7a	Build mutual trust between ILK holders and scientists through cultural respect and sensitivity
7e	Promote non-discrimination, inclusiveness and the recognition of social and cultural plurality
7c	Acknowledge the time needed for decision-making by customary and traditional institutions
7d	Work in culturally appropriate environments, respecting diverse styles of engagement
Strengthening IPLC and their knowledge systems	
7f	Promote and strengthen the conservation of the in-situ knowledge systems of IPLCs where it is gathered, used, applied, renewed, enhanced, tested, validated, transmitted, shared and governed
18b	Facilitate the access and management of available sources of ILK (culturally appropriate is not mentioned)
17e	Build of the capacity of IPLC to engage in and benefit from IPBES
8b	Ensure meaningful participation and engagement of IPLC
7b, 26, 27a,	Work with existing organisations and networks of IPLC
Supporting knowledge exchange	
13	Search for collaborative definition of problems and goals in assessments
18c	Promote and catalyse the mobilisation of indigenous and local knowledge... in ways that reflect the concept of parallel validation or co-production
7b and e	Provide opportunities for participatory and empowering dialogue with IPLC on topics relevant to IPBES
7f	Strengthen the Dialogue between knowledge systems as an iterative two-way process
Respecting rights	
11	Seek for free prior informed consent
5c	Involve collaboration with initiatives, guidelines and best practices of multilateral agreements and other entities
11	Activities should not occur where they would prejudice the internationally recognised rights of IP and interests of LCs

Table 1. Key practices recognised in the IPBES Approach to recognising and working with ILK (Annex II to decision IPBES-5/1). Taken from the Poster prepared by CSIRO shared at the Dialogue.

messages in the SPM are negotiated by governments, so that means that the SPM is not independent from governmental interests and tensions. Another question that was asked to be discussed further during the Dialogue, is how Indigenous and scientific knowledge are going to interact to provide and deliver evidence that is policy-relevant at different levels?

IPBES and Indigenous and Local Knowledge Systems

Ro Hill then asked participants to gather around two other posters, again one in English and one in Thai, that explained the IPBES Approach to ILK. The approach to working with ILK in IPBES is multi-faceted and applies across the four functions of IPBES, which are assessments, knowledge and data, policy support tools and methodologies, and capacity building. Box 1 describes how ILKS is used within IPBES, including emphasis on that it is diverse and dynamic, and the importance of context specific definitions. IPBES has also articulated different categories of experts in relation to ILKS (Box 1, (d)). This is an important development that challenges and changes the previously dominating notion that it is only scientists, e.g. anthropologists, that can contribute ILK in assessment.

One of the directives of the IPBES Plenary for the ILK Task Force was to produce procedures and approaches for engaging with ILK, for its consideration in the assessments.

A framework was adopted at the IPBES 5 Plenary in 2017¹⁰. Table 1 summarises key practices for working with ILK in IPBES assessments.

Discussion

Additional suggestions were made on opportunities for IPLCs and experts on ILK to engage with IPBES; such as the IPBES Fellowship Programme. There are different capacity-building opportunities for Fellows and that it is a great entry point for young people to get involved. There are regular calls for these opportunities,

After reflecting how the three categories of ILK holders and experts relate to the governance of IPBES, the comment was made that:

“Perhaps there is not yet a sufficient representation of ILK-holders in the IPBES governance system?”

It was recognised that the ILK Task Force does not have enough ILK holders yet, and there was discussion about next steps to improve increasing representation of ILK-holders within IPBES? IPBES is still a young institution (6–7 years old) and it is hoped that inclusivity will improve in the years to come.

10. Annex II to decision IPBES-5/1: https://www.ipbes.net/system/tdf/ipbes-5-15_en.pdf?file=1&type=node&id=15537#32



Figure 3. The IPBES Assessment process. IPBES (2018): IPBES Assessment Guide Summary. Secretariat of the IPBES, Bonn, Germany.

“The door is open and ILK holders are invited to come in. There are constraints that make it difficult to cross the threshold (e.g. funding barriers, rules of entry, inclusiveness) and there are also limitations that might make it difficult for ILK holders to be part of IPBES. It is important to understand these barriers and to address them.”

It was concluded that IPBES has a huge challenge that is not yet completed. IPLCs represent voices that are generally not easy to hear, but IPBES is a good opportunity to speak out loud. ILK is a huge window to really co-produce knowledge, and the scientific knowledge should open that window and engage with ILK, because ILK is alive and it is right there in front of our eyes. It just requires sensitivity to grasp its importance.

Assessment process and ILK

Ro Hill then invited the group to gather around the last two

posters for this session, again one in English and one in Thai, that presented the steps in the IPBES Assessment process, and the parallel steps to amplify engagement with ILK.

Figure 3 outlines the different steps in an assessment process. Along the process, there are moments where IPLCs can make input. See figure 2, page 11. For example:

1. The request of scope for an assessment. This request is circulated among IPLC networks.
2. The scoping stage. The Pollination Assessment, as the first IPBES assessment, was scoped without any input from IPLCs, except those from the ILK-Task force MEP members. Now, there is involvement of IPLC networks in the scoping process. The detailed scoping should have a selection of experts, and it should include ILK-holders. Normally there is an ILK Dialogue workshop. The Plenary approves the scoping document.

3. Nomination and selection of experts for the assessment. The experts are nominated by governments and other organisations and selected by the MEP.
4. Formation of an ILK Liaison Group for the assessment, to support inclusions of ILK and ILK holders and experts in the assessment.
5. Review of the first draft. There is potential for a second ILK Dialogue workshop at this phase
6. Review of key messages. This is another key moment with potential for an ILK Dialogue workshop. The key messages are developed as part of the Summary for Policy Makers.

The assessment consists of the Technical Report and a Summary for Policy Makers (SPM). The SPM goes to the Plenary where it is gone through word-by-word before it is adopted. The Technical Report is accepted without negotiation in the Plenary. After this, there is potential for engagement in different activities for uptake of the assessment, e.g. seminars and dialogues organised as a way to strengthen the uptake of the assessment.

Ro Hill reflected on her experience the SPM for the Pollination Assessment, that the final wording is indeed an outcome of negotiations – although it cannot alter material in ways that conflict with the evidence in the Technical Report. As an example, the term “biocultural diversity” was not accepted by some policy makers, who wanted the term out of the Assessment. However, the term was retained.

Participants reflected that the whole IPBES process seems quite complicated, complex and bureaucratic. It is good that consultations are in place, and that this process is in place to bring the data and knowledge together from different places. Recognising that many of these phases in IPBES assessments are “in principle”, it matters who is raising the questions about for example what should be scoped. IPLCs should be involved in scoping the questions in the first phase, rather than being brought in later and asked for their opinion.

It was explained that there is usually two to three years for making an assessment. A lot has to happen quickly. The scale and complexity of the challenge needs to be taken into account. Time frames are tight, there are many people involved; documents need to be in many languages. There is a need to ensure early contact between assessment authors and people with ILK experience. The ILK TSU is focusing on the quality of that first encounter which helps set scoping questions for the assessment. The selection of experts should have good ILK representation. Bringing ILK holders in the scoping phase is crucial. However, the opening questions process is not always financed and if the money is not committed, then it is complicated to make it happen.

Ro Hill noted that one of the items in the IPBES Approaches for Working with ILK is, “consider time needed for customary decision-making”. This is a tension, as this time is really not there. But IPBES has agreed to fund an ILK

dialogue at the Scoping phase of each assessment, so that should support ILK engagement at an earlier phase.

It was then pointed out that, the governments pushed for pollinators to be the theme of the first assessment. IPLC networks should be asked what types of assessment should be made, so far, assessments do not really respond to IPLC demands. This part is very important in terms of policy, in order to legitimise the decisions that are brought up after the assessment is conducted. Another aspect is that there is an imbalance in the author teams with few or no representation of ILK holders. In case ILK experts are involved, they might feel they are in a difficult position if they are expected to represent all ILK holders and also may be alone in negotiating the importance of ILK. There are also other imbalances in Assessment author teams, such as lack of people with social science training etc.

Introduction to connecting knowledge systems based on equity, reciprocity and usefulness for all involved, and the Multiple Evidence Base approach

Maria Tengö, researcher at the SRC, presented the Multiple Evidence Base (MEB) approach. The underlying idea is to conceptualise in new ways how connections between knowledge systems could happen – to lead to new practices and outcomes that is useful for everyone involved. The need for this emerged in the first dialogue across knowledge systems 2012, in Guna Yala, Panama – how can we think differently of connecting across knowledge systems based on equity, reciprocity and usefulness of all actors involved? She explained that MEB approach is one way to talk about this and it builds on other related ways of thinking. In particular, it was developed related to international science-policy and practice arenas, beyond the local, where the ILK shared is detached from the local context and relationships. This means that creating understandings between different knowledge systems can be particularly challenging.

Maria Tengö described three different ways to think about cross-fertilisation between knowledge systems:

Integration often means bringing components of one knowledge systems into another through a validation process. There are examples where integration of ILK into scientific knowledge can be useful for indigenous communities. In Hin Lad Nai there is one example of a collaboration where researchers used scientific methods to show how the rotational farming system contributed to binding carbon in the soil. However, in many cases, what happens is that validation of ILK isolated from its context is disempowering to the knowledge holders and not represent the value of the knowledge. It is about the control and the integrity of knowledge which is easily lost when validated by and incorporated into another knowledge system. Thus, as discussed at the Guna Yala dialogue, integration of knowledge is often problematic and not desired.

Co-production is a collaborative process to generate knowledge jointly by different actors. Often it is emphasised that all partners should be involved throughout, including deciding the focus of the inquiry, how to build new knowledge, and a joint analysis of the findings. This is an important step forward to push for participation and the value of different kinds of actors in generating knowledge, e.g. to address sustainability issues. However, it is often assumed that all partners in a co-production of knowledge process are equal, but we know that this is not always the case. Also, it does not recognise that different actors may also represent different knowledge systems. There are power asymmetries, among actors as well as between different knowledge systems. For example, scientists are often convening such processes, and scientific knowledge systems are seen as the norm framing the collaboration. One way to address this is a parallel approach.

Parallel approach means integrity and respectful interactions between knowledge systems. It emphasises complementarity rather than converting different knowledges into one system through the validation mechanisms of that system. It is about recognising the integrity of each knowledge system, its institutions, actors, and practice. This means acknowledging that each knowledge system has its own way of validating and building evidence.

In the spirit of a parallel approach, the MEB approach emphasises the complementary between knowledge systems and the importance that there are many sources of evidence that contribute to *an enriched picture of understanding*. Validation of the different contributions should take place within the respective knowledge systems, to fully reflect the value of the contributions and its integrity. Different knowledge systems can influence, inspire and cross-fertilise each other, but the MEB approach reminds us that they are distinct and have equal value. Maria Tengö shared some examples of how ILK has different ways of validating knowledge, for example experiential learning, learning-by-doing, through knowledge custodians, communications with spirits, etc. This has also been discussed in previous dialogues and walking workshops across knowledge systems.

Over the past years of dialogues and piloting the MEB approach, it has been found that mobilising the knowledge, and build confidence of ILK holders in how to articulate their knowledge before sharing, is critical. But it also matters how you define the questions – it is crucial that different actors are co-producing the knowledge definition for collaborations to be fruitful. Furthermore, the need to do joint analysis across knowledge systems and evaluation of this enriched picture of understanding is often not addressed. Mutual understanding of converging and diverging evidence between knowledge systems is a constructive point for further knowledge generation. The Pollination Assessment, including the key messages in the SPM, clearly shows the value of diverse knowledge systems to enrich the picture around the situation for pollinators and pollination.

However, in terms of process there are many ways to improve and strengthen usefulness for all involved throughout. In particular, concerning the joint formulation of the problem to investigate and the joint analysis of the contribution of the different knowledge systems.¹¹

Maria Tengö continued to provide guidance for how to work with a MEB approach. First, she emphasised the need to address *actors, institutions and processes* when knowledge systems interact. *Actors*: who are representing the knowledge? This refers back to box 1, which talks about different kinds of experts representing ILK in IPBES assessments. Previously, scientists such as anthropologist have often been called in to represent ILK. Further, *institutions*: to generate, protect, and transmit knowledge can be very different across knowledge systems. In scientific knowledge systems, it is structured around universities, departments, PhD-educations, and publications in scientific journals. In an indigenous knowledge system, the institutions guarding the knowledge may be the elders, trainings to become a leader, rituals and practices applying knowledge for example in farming or beekeeping. This matters for how learning happens; who is guiding that learning, how knowledge transmission is going on, and how validation occurs. Lastly, concerning *processes*: it is important to design meetings in a way that all actors can participate and learn on equal level and not assume that they have the same starting point.

Maria Tengö suggested that this requires attention to five different tasks (see Figure 4), and used the organisation of this dialogue as illustrations.

- 1) **Mobilise knowledge:** ensuring knowledge are mobilised to be shared and a culturally appropriate way and knowledge holders are empowered to meet on equal level. At this meeting, the IPLC participants all have experience of working with their communities to revitalise and compile their knowledge.
- 2) **Translate knowledge:** This a mutual process that different actors get the opportunity to understand each other's knowledge and something about their respective knowledge systems. In this dialogue, we use the walking workshop approach and the landscape itself, as well as the posters with the key messages, as a way to facilitate translation.
- 3) **Negotiate knowledge:** jointly analysing different knowledge contributions, recognising that there will be overlap and agreements but also disagreements and contradiction. At the Dialogue, we intend to give space for discussion and different considerations.

11. See earlier walking workshop reports: <https://swed.bio/reports/mobilisation-of-indigenous-and-local-knowledge-for-community-and-ecosystem-wellbeing/> and <https://swed.bio/reports/international-exchange-meeting-for-mobilisation-of-indigenous-and-local-knowledge-for-community-and-ecosystem-wellbeing/>

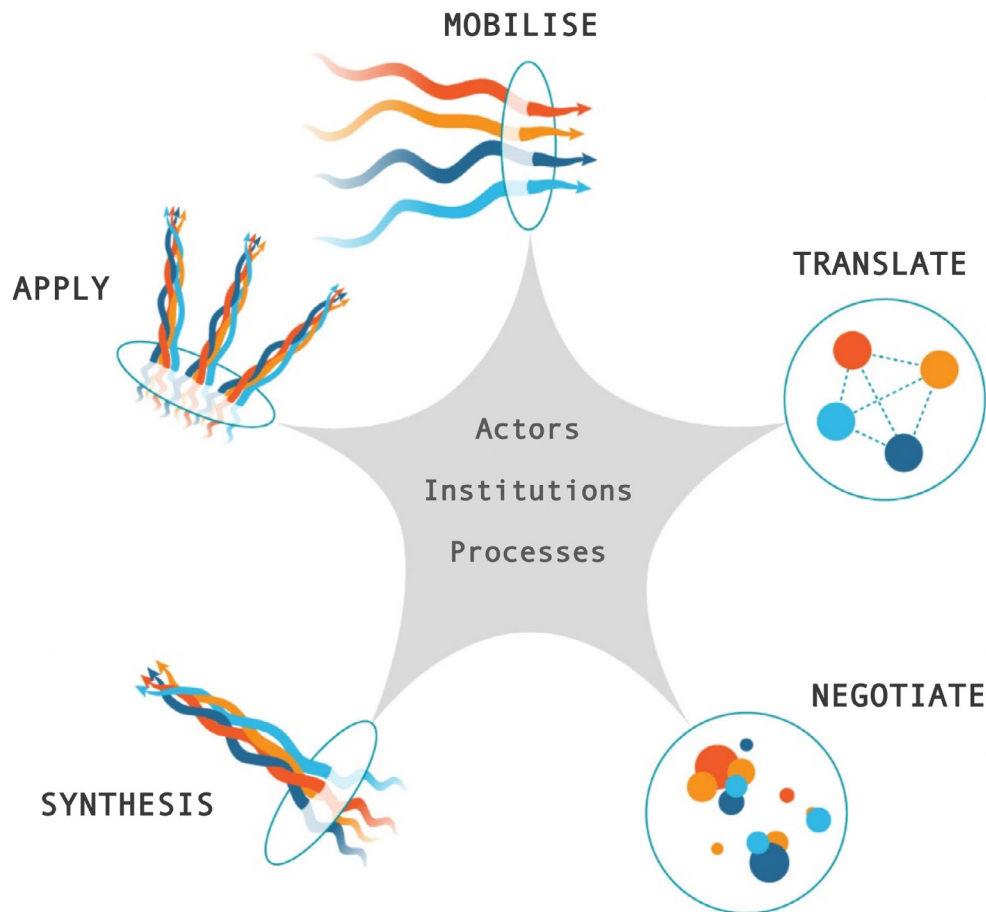


Figure 4. Five key task in a MEB approach. Tengö, Hill, Malmer, Raymond, Spierenburg, Danielsen, Elmqvist, Folke (2017)

- 4) **Synthesise knowledge:** bringing knowledge together while still respecting integrity and potential disagreement, and not forcing consensus. At this point, we emphasise dialogue as a process to find ways to articulate where we agree and potentially disagree.
- 5) **Apply knowledge:** develop knowledge that can be implemented in different scales and contexts – the usefulness for all involved. Our ambition to do this is reflected in the four objectives of the Dialogue, representing interests of different participants.

After this, the discussion was opened. One participant said that this is an important step forward. Yet, one problem is that we talk about it in different directions. The dichotomy within science (i.e., natural and social scientists) is problematic for the inclusion of ILK. Natural sciences, or the hard sciences, often have more power than the social sciences. The references in the IPBES assessment are often dominated by the natural sciences.

It was reflected maybe we need to create also inter-ontological¹² dialogues to be able to understand each other?

“We are asked to contribute and to bring ILK into the IPBES discussion but we don’t see the spaces for ILK – we just see a large pile of science papers”, it was stated. One participant reflected on his experiences with working with pollinations and pollinators with Indigenous peoples in Mexico – it was needed to take the discussion back to the basics and pollination was not a concept that was well understood. It is important to base the discussion in local understanding and practice – including the use of pesticides and the impacts on pollinators and the impact on the agricultural production (and economics).

One of the pollination assessment authors explained that one of the reasons why we have a Pollination Assessment is because of beekeepers. Particularly in the US and in France the beekeepers, that are also ILK holders, were very vocal and brought attention to the issue of pollinator decline. In the UK there are beekeepers in the Parliament, and that is the reason why there is a National Strategy on Pollinators.

One of the participants working with IPBES said that cross-fertilisation is needed to bring policy options to solve local to global problems. We need practical, usable, applicable knowledge. Because of the power asymmetries, capacity building is key for having an equal-to-equal dialogue. ILK exists where Indigenous institutions exist. They

12. **Ontological** is the philosophical study of being. More broadly, it studies concepts that directly relate to being, in particular becoming, existence, reality, as well as the basic categories of being and their relations.



Brenda Tahi and Atamira Tumarae, Tuhoe Tuawhenua Trust, Aotearoa (the Maori name for New Zealand), presenting their experiences as a people and as ILK holders of knowledge and expertise on pollinators and pollination. Photo: J. Bumroongchai

are critical for ILK to be mobilised. And awareness raising is important, so that ILK holders can participate with a strong voice, in IPBES, and elsewhere where knowledge systems are meeting.

Maria Tengö explained that there is value in recognising actors roles as stakeholders and knowledge-holders in knowledge mobilisation processes. To define the issues of an assessment, is part of the scoping, and that is why it is so important that ILK holders are part of the process from the onset and the whole way through. However, Indigenous peoples are often seen primarily as stakeholders. But they are also knowledge holders and can provide insights into how to define and solve problems. The opposite often applies to scientists – they are seen as experts only, and that they also have a stake is not taken into account.

It was emphasised that what IPBES is looking for, is knowledge for action. It is knowledge for actions that matter, knowledge that can connect across governance levels and be a base for informed policy decisions. It is a strong argument for looking beyond scientific knowledge, and into knowledge that is actually applied in sustainable governance on the ground. It was brought forward that when dialogue fails, it is often when there is not enough attention to ensure conditions for equity.

Session 2: Sharing experiences of ILK holders contributing to IPBES pollination assessment

The purpose of this session was to revisit the contents of the IPBES Pollination Assessment, through the main findings that emerged from the contributions of ILK. In particular there was an ILK Dialogue held in Panama 2014¹³ that gathered Indigenous holders of knowledge and Indigenous experts on pollination, along with members of the IPBES ILK Task Force, recently established at that time. Their contributions to the Pollination Assessment were vital and in particular contributed to Chapter 5. These ILK holders are among those being invited to this dialogue in Thailand, with the double aim of providing an opportunity to feed back to them regarding outcomes of the Assessment, and to get their views on the relevance of the analysis and conclusions in the key messages of the SPM. In addition, ILK holders from other initiatives on pollinators were invited, so there were a number of presentations on pollinator initiatives from all over the world in this session.

13. Lyver, P. et. al. 2015

Brenda Tahi and Atamira Tumarae, Tuhoe Tuawhenua Trust, Aotearoa/New Zealand

Brenda Tahi is from Ngati Porou tribe, but lives amongst the Tuhoe tribe in Ruatāhuna. Atamira Tumarae is a descendant of the tribe of Tuhoe. These tribes belong to the Maori people of Aotearoa - the Maori name for New Zealand. The Tuhoe experience was part of the initial ILK dialogue on pollinators in Panama 2014.

Brenda Tahi opened by recognising the people of the land where we are holding the Dialogue. Atamira Tumarae presented a poster depicting the Maori worldview. She explained they trace their genealogy back to the ancestors. They are known as the Children of the Mist. Maori worldview features the genealogy with the Sky Father and Mother Earth. Their whole genealogy comes from both The Mist and The Mountain. This genealogy is embedded in who they are. It is vital to their well-being, and it upholds their identity. “In our tribe we identify ourselves through the land, our whole being is about the land and our connection to the land, and without the land we are nothing”, she said. “This is our worldview of who we are. People know us as Maori, but we call ourselves *tangata whenua*, which means ‘people of the land’, without the land, we wouldn’t be anything at all.”

Brenda Tahi thanked everyone for the opportunity to talk about their knowledge and worldview of pollinators and pollination. Atamira Tumarae has described our worldview, she said. This is a framework that has been developed with different Maori elders. “Maori are a colonised people, and the process of colonisation has been going on for 150 years. This has meant a lot of change for our people and loss of our traditions. In recent decades there has been a lot of revitalisation of our traditions. It is a huge fight for us, within our communities, to actually recover the knowledge of the past, and bring all those things into play for our future generations” she explained. “This worldview¹⁴ (Figure 5) has taken us about three years to pull together through conversations with our elders. Our definition of traditional knowledge will be different to that as understood by others because of the impacts of colonisation on our knowledge, starting in the 1800s.

“Ruatāhuna sits in a valley in the middle of 20,000 ha of Maori freehold title. The land is critical to our well-being. Some of our forest has been selectively logged. We have a view as to how we want our forest to look in the future and pollination is key to that. Due to colonisation we have a lot of pests introduced to the forest and we want to be able to manage them in the future. We are working with our old people to capture as much traditional knowledge as we can, so we can use that in the future. Identifying our pollinators and how they pollinate is of interest to us. However, species

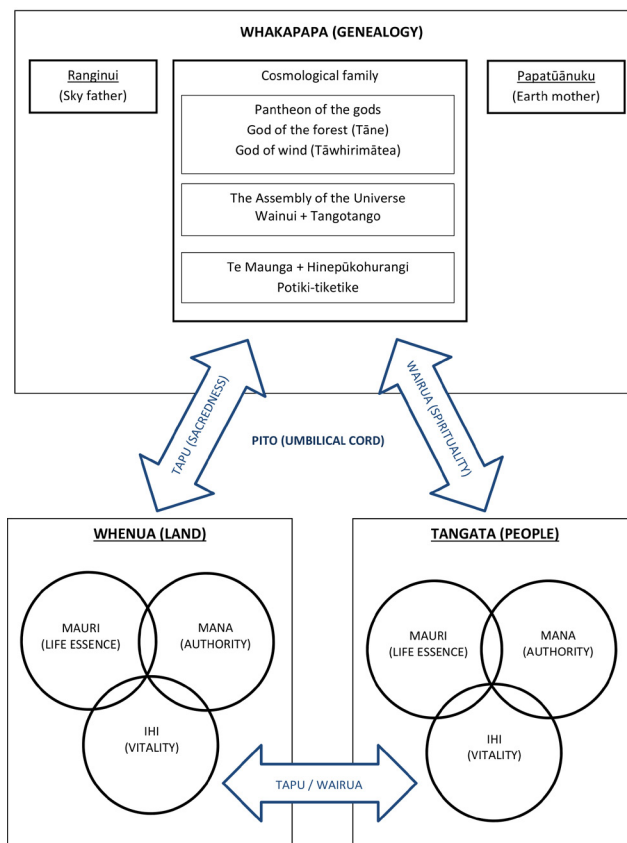


Figure 5. Tuawhenua worldview built around the three key domains of whakapapa (genealogy), whenua (land and environment), and tangata (people), and its function governed by the concepts of mauri (life force), mana (authority), and ihi (essential energy, feeling). Source: Timoti et al. 2017

key to us are ‘protected’ by the government and we are prevented from ‘relating’ to them – harvesting and managing them in our traditional way. It has been very difficult for the Maori to work and live within New Zealand’s land tenure system, but we do our best.

We were wild honey hunters, but we lost many of these traditions. We are not allowed to work our forests in a way that we would have done it in the past. We are limited as to what we can do with our land which is steep, mountainous. We are not allowed to clear the forest, and have determined that bee keeping was one way of developing sustainable enterprises. We sell into the tourist market and in some supermarkets, and we do a bit of export; we manage the honey along the value chain from ‘land to brand’ rather than selling to a cooperative or similar. We seek to reconnect our people with the forest, and are looking at programs that build relationships between our people and our forest.

So, beekeeping is one of the few activities that we are allowed to do. We are very interested in how the Karen people manage the forests, we find it quite inspirational. Also, we seek the reconnection of our people to the forest. We want to experience the forest, understand the forest, restore the forest, and keep it well for the future generations.

We’ve been colonised but because we are isolated, we

14. Timoti et al. 2017

have managed to keep some of our knowledge a bit better than other Maori tribes. We are working with our people to keep as much traditional knowledge as possible. We want to focus on our iconic species. But government regulations are preventing us to 'relate' to these species. This connection that has been lost has impacted our people. This is something we want to recover from."

A participant asked about how they managed to obtain that knowledge around beekeeping. Brenda Tahi said that it was done with much difficulty. They have invested a lot in training and developing skills. Community development has been the answer.

Ruth Spencer, GEF Small Grants Programme (GEF SGP) and MEPA Trust, Antigua and Barbuda

Ruth Spencer is the National Coordinator of the GEF SGP in Antigua and Barbuda. She has been part of the Caribbean Regional Trialogue on Pollinators, Food Security and Climate Resilience, which was an uptake event of the IPBES Pollination Assessment, organised by BES-Net, UNDP¹⁵ in 2018. She started her presentation by explaining that beekeeping is linked with agriculture and sustainable tourism in Antigua. She spoke about a natural bird sanctuary using local knowledge to support pollinators and building resilience to climate change. This sanctuary is a living lab in the island, she explained. Establishing a natural bird sanctuary created a space for bird pollinators: soursop bird; white crown pigeon; yellow warbler; broad wing hawk; canary birds and many more. The Department of Environment organised tours for children to this bird sanctuary.

"Land clearing is killing some of the plants and species that pollinators live in. Further, it is creating a loss of pollinators, including birds and bats. An example of strategies developed by communities is that bee keepers are developing a plantation of disease resistant coconut plants and other flowering plants. Local communities have the knowledge and you should value it.

Our biodiversity is being destroyed. Thus, we, the communities, have to inform the policy-makers and make them realise that we have the knowledge that is needed to protect pollinators. In Antigua we pushed the legislation forward. Push for your local groups, empower them and let them speak for themselves. Ensure that the policy-makers listen to them. Governments need our information. It is important to not just provide knowledge, but to have a dialogue, and demand them to take actions. Thus, put on events and produce case studies and ensure they get included in government reports.

But we also need information, and we are trying to educate all the community groups. So I have a responsibility

when I get home to bring my groups together to inform them as to what is going on in IPBES, and engage people in these discussions we have here".

Simone Athayde, University of Florida and Federal University of Tocantins, US/Brazil

Simone Athayde is a Core Faculty of the Tropical Conservation and Development Program (TCD) at the University of Florida. She presented a case from Brazil entitled "Engaging Indigenous and Academic Knowledge on Bees in Amazon" which was adapted from her contribution to the 2014 ILK Pollination Dialogue in Panama. It is a concrete example on co-production of knowledge, in the process of bringing together Indigenous and academic knowledge on bees in the Amazon¹⁶. It has a lot of parallels with the MEB approach.

"The project, which was developed by the Brazilian NGO Instituto Socioambiental (ISA) in partnership with the Xingu Land Indigenous Association (ATIX), aimed to generate income from Non-Timber Forest Products involving four Indigenous groups, by developing beekeeping using the Africanised honey bee and training Indigenous beekeepers. This was different to their usual custom to hunt for honey in the forest and collect it from stingless bee species.

The project funding agency raised the question *what would be the impact of the exotic Africanised honeybee on the native species of stingless bees?* The Africanised honey bee is a hybrid between the European and the African honey bee, which was accidentally created by an experiment conducted by a Brazilian scientist in the 1950s. This hybrid was very aggressive, but produced a lot of honey. According to the participatory research carried out to address the funding agency concern, some Indigenous peoples had stories about this hybrid bee, and said that only Shamans could eat its honey. Other people did not even now that the Africanised honey bee was an exotic species.

The guiding question or problem was addressed by engaging indigenous communities as well as non-indigenous practitioners and scientists. The transdisciplinary approach, started with problem framing, then identifying relevant insights from the different knowledge systems, engaging these different knowledge systems, and finally evaluating and applying the co-produced knowledge. One of the most important components of this approach was to collectively reflect on the process.

One of the interesting perspectives that came out from this project was that for Indigenous peoples, bees are spiritual beings that connect heavens with the land. Through music and singing, the shamans can communicate with the spirits of the bees, and learn their names. The stingless bees have stories attached to them, who were told by the elders to

15. <https://www.besnet.world/event/caribbean-regional-trialogue>

16. Athayde, et.al 2016



Participants were welcomed with coconut sticky rice wrapped in banana leaves and blue Cowpea flower tea. Photo: J. Bumroongchai

youth in participating Indigenous schools. According to the elders, spirits are responsible for determining how much honey will be produced, and how much will be harvested.

The Africanised honey bee then is like the non-indigenous colonists, who came and took our land, but we must learn to coexist with them. The Indigenous people likened the introduced hybrid (Africanised) bees to colonisation – and the fact that they have to find a way to live together”.

The main conclusion was that in the Amazon, in the Xingu Land, there was no problem to conduct artisanal and small-scale apiculture, but it would be a problem to do it at a large industrial scale. Thus, the conclusion was that coexistence between the Africanised honey bee and stingless bee species was possible, but only if and when under control.

John Lengoisa, Ogiek Peoples' Development Program, (OPDP) Kenya

John Lengoisa is a Programme Officer of OPDP and member of the Ogiek Community in the Mau Forest. The Ogiek experience was also part of the ILK contribution to the Dialogue in Panama 2014. He introduced his presentation about the forest life of the Ogiek people by a documentary community-produced video called “Restoring Ogiek Land Rights: A Story of Unity and Resilience”¹⁷. The Ogiek have been losing land to agriculture, land grabbing and forest

destruction, but in 2017 the Ogiek hunter-gatherers of the Mau Forest won a battle against the Kenya State at the African Court¹⁸ of Human and Peoples Rights. The video illustrated the picture of the Ogiek and the problems that they are facing. It speaks about the importance of the forest for maintaining Ogiek knowledge, connecting to their country, the ability to beekeeping and to teach their children their knowledge, and way of life. The Ogiek belong to the forest and it is their only home.

“The Ogiek do harvest honey in the forest. Honey contributes importantly to Ogiek culture: rituals, ceremonies, dances and so on. It has cultural importance, for example in wedding ceremonies and initiation ceremonies. The honey brew is the one used to bless among the Ogiek. Even for the bride price, and the honey brew is used to bless. It is a currency for trade. How many honey bags are you going to pay for X? John Lengoisa shared a picture of an Ogiek traditional wedding. In the picture you can see an elder blessing the ceremony with honey brew.

There are many actions that the Ogiek are doing to protect bees, including raising awareness of conservation of bees through ecosystem regeneration, or supporting beekeeping initiatives at multiple levels. Modern bee hives are also introduced in the community, and they are working with government, through the National Museum of Kenya, and other agencies to document knowledge of bees so that it isn't lost.

The Ogiek has lost a lot of land to agriculture and other drivers of biodiversity loss. Some of the current songs of the Ogiek are a cry for a forest that is being lost or being degraded. Before the Ogiek songs were celebratory, celebrating the forests and the products it provides to the Ogiek people.

The Ogiek have done some participatory mapping throughout the Mau forest. The elders were able to show how the water towers are being depleted because of deforestation. Many swamps have been dried out. It is important not to isolate the pollination knowledge from other pieces of information and the broader Ogiek knowledge”, John Lengoisa stressed.

It was noted that Ogiek knowledge about the landscape and biodiversity is very sophisticated, and they have much knowledge about other impacts of development on the landscape as well. The Ogiek communities have also developed maps and an atlas of their traditional knowledge of the Mau Forest and the escarpment.

Elmer González, Fundación para la Promoción del Conocimiento Indígena (FPCI), Panama

Elmer González is from the Guna people, and the President of FPCI. He was also among the holders of ILK on

17. See video “Restoring Ogiek Land Rights”: <https://www.youtube.com/watch?v=2z5iMXDmH5c>

18. Press Statement of the African Commission on Human and Peoples' Rights following the handing down of the judgement in Application 006/2012 by the African Court. <http://www.achpr.org/press/2017/05/d358/>

pollination that took part in the first ILK Pollination Dialogue in Panama 2014. He started his presentation by stating that the knowledge he is sharing here, is a collective knowledge from the Guna people in the Caribbean Coast of Panama. It is part of the traditional education. His knowledge is created by people. Western knowledge is more individualistic. If we talk about other knowledge systems it is usually when referring to an individual, but the knowledge he talks about is collective, even if there were individuals that were speaking in the past.

“I am going to talk based on the experience of the Guna people. First, we have territories that is demarcated. Our Guna Yala territory was established in 1938. It is a different place in Panama, where you would need a passport to enter - so different as to be almost like a different country. The advantage for us the Guna People is that the government is not bothering much. This has allowed us to get to know our territory from coast to land. The Guna people know their rivers and the names of their animals.

Traditional knowledge tells that we are all a family, all species, rivers and so on. This familiarity allows us to speak about birds. A bird expert (ornithologist) knew about a bird. The bird sings to the ancestors and transmits knowledge from them. This bird brings seeds. There is another character who is an expert in plants. He knows when trees will bear fruits. He is also an expert. The Guna understands the migration of the birds would indicate something else. And there is abundance of butterflies. Because there is food for birds and they are all pollinating the area. The Guna says that somewhere it is very cold and that's why we know that birds are coming. In summary, this means knowing your ecosystem. This is how the system works and the knowledge of the ecosystem gets into people's minds. All this is based on observation. And what is the first step of scientific knowledge? It is also observation. It's because of these observations that we can be farmers. It is a very fragile ecosystem. And now the system is under risk.

These are the observations that the Guna have from pollination. We need to have the traditional education continuing to transmit this to other generations. This reflects the holistic approach of Indigenous knowledge.”

Elmer González also explained a bit more about how the Guna Yala region is an autonomous region under the control of the Guna people. The Congreso General Guna is the institution of the Guna people. And it is one of the best organised institutions in Panama. “The Guna organisation is emphasising that we need to start with collective, rather than individual knowledge. We, the Guna people, are the mechanism for documenting our own knowledge. If others want to come into the community (researchers) and even if we want to research ourselves, there are conditions and protocols for treating that knowledge – based on the understanding that all knowledge among the Guna is communally held”, Elmer summarises.

Edgar Pérez, Fundación para el desarrollo rural Junej T'inam, Guatemala.

Edgar Pérez is an ex-member of the IPBES MEP, ex-Co-chair of the ILK Task Force, and he was part of organising the ILK Pollination Dialogue in Panama 2014. His point of departure was the Mayan civilization that had a lot of knowledge about their environment, including pollinators and their role.

“Biodiversity hot spots and agro-biodiversity are strongly related with ancient civilizations and cultures across the world. Mesoamerica and the Indo-Burma are two of the hot spots which contain a lot of biodiversity and culture. The Mayan civilization had a lot of knowledge about their environment, including pollinators and their role. 10,000 years ago, the Mayans harvested all what they needed directly from the forest, they were ‘gardening the forest’ probably in the same way that Karen People from Thailand do today. According to the Mayan Codices of Madrid, Mayans domesticated a stingless bee called ‘Kaab’ (*Mellipona beecheii*) in 50 B.C.

Both Mayans and the Karen peoples use the rotational farming practices in their forests for the production of food. It does not mean that their forests were changed into a production field; in many cases, different stages of rotation & natural restoration of forest (over 20-30 years) maintain and balance biodiversity in a mosaic landscape. Multi-cropping and inter-cropping systems are highly productive, highly diverse and include the multipurpose use of the different kinds of plants.

Traditional management of landscapes and forests, have brought new domesticated species for food and agriculture, new species of fruits have been included into the human diet, new plants for medicine, shelter and ornaments etc., have appeared. Indigenous knowledge and practices (ILKP) have been working as biocultural genetic reservoirs not only for food production, but for all the human kind. In recent times, ILKP have been converged in the “home gardens” all over the tropical and subtropical regions of the world, gathering more than 800 species. ILKP have also been applying selection of seeds and created a lot of varieties. In Huehuetenango in western highlands of Guatemala there are more than 60 different varieties of maize. Thailand contains more than 10,000 different varieties of rice. Is this the real richness? Or we would like to see western ways of production in detriment of biodiversity?

The traditional methods of food production and consumption is about more than food, it is about food diversity and its meanings. It is a biocultural way of saving the richness and knowledge of the Earth”.

Julio López Maldonado, Universidad de San Carlos de Guatemala, Guatemala

Julio López Maldonado is an expert on ILK on pollinators and pollination, and he participated in the first IPBES ILK dialogue on Pollination in 2014, and contributed with a case study to the report.

Julio López continued the thread about the Mayas, and the central role of pollinators in their belief system. “There is a huge amount of material evidence where it is shown that bees occupy an important role in the Mayan society”, he said. “Bees are present in many historical sites among the Maya. Even some of the Mayan temples are designed emulating bee-hives. Bees are where ever we go in archaeology. The shape of their buildings and structures reflect the natural shape of the honey comb. Even in ancient sculptures and carvings, honey combs and hives are featured. There are many depictions of bees in Mayan civilization, including basing their own social structures in civil society on bee behaviour and life. A huge amount of information was left by the Mayans, even so their understanding of bees was far more advance than current day understanding.

Ancient books from the Mayas show the presence of bees. The Manuscript Badianus¹⁹ was written by two Indigenous experts in the 16th century. Cosmological symbology of fertility is represented by bees. The cosmological importance of bees is clear in many traditional myths and books. The Mayan Codex features very important and deep information on bees”.

Julio López continued to talk about studies from practices in Guatemala of today, and stated that pollination relies on insects, birds, bats and other species there. He explained that in his project, they had identified members of the society that had knowledge on pollinators. They prepared nets to capture insects to be able to study them. The project had also a teaching component, educating the community about what insects are found in the area. It was found that local people in this community didn’t realise the importance of the pollinators, and many insects were lumped together and identified as being of negative impact on the crops and killed. Other activities were around collecting medicinal plants and building dialogue amongst the community as to the range and array of medicinal plant knowledge, and then building an understanding of the role and benefits of pollinators.

Thingreiphi Lungharwo, Naga Women Union, India

Thingreiphi Lungharwo is an indigenous woman from the Tangkhul Naga community in north-east India. She is one of the Global Indigenous Fellow for Biodiversity under GEF SGP. She works with bee keepers in her community and participated in the IPBES Workshop on Knowledge Generation: Pollinators and Pollination in 2017. Thingreiphi Lungharwo explained that the Naga people she belongs to understand pollination as the natural process of fertilization and see it in a holistic manner. “Pollination is part of a

complex system that defines how we relate with the natural world”, she said. According to their belief, “honey bees are considered as messenger, they carry important messages and that beekeeping is integrated within agricultural practice and forest gardens and “home gardens” as part of the complex natural resource management systems. Pollinators are seen as the connectors between plants and animals and the entire ecosystem of our land. The Naga people have a complex land use and management system, and have evolved land use and agricultural practices where they engage bee hives, and also a wildlife sanctuary. They also take care of the health of the soil, and seek to produce less waste and to cultivate flowers around their houses to attract pollinators”.

“We have identified a lot of pollinators”, Thingreiphi Lungharwo explained. “For example, one village has identified 96 bird species endemic to their village, and 7 types of honey bees. We do not emphasise one pollinator over another, we give equal importance to all pollinators. We believe that if we take care of our land, our land will take care of us. We bring wisdom from the past for the present and future of our next generations. We believe in the spirit of the unseen. This allows us to maintain a balance with nature and the ecosystem, and it influences our values. It is all about relationship with nature. It is not about economic values, but about our spirituality and our cultural development. The jewellery I am wearing today is inspired by the honey bees.

The status and trends in our area is that we still have pollinators, but many of them are declining in their abundance. Solitary bees are less in abundance, but we still have some of them. External drivers such as mining, and use of agro-chemicals, are driving most of these declines. We do awareness and advocate for adoption of policy on pollinators in the Indian Himalayan region and from the government initiatives are taken such as ‘Honey Mission’. We have also started collaboration between north-east India and Myanmar”.

Session 3: Presentation on the main findings of the IPBES Pollination Assessment

After the contributions and case examples from the ILK holders and experts from around the world the main outcomes of the IPBES Pollination Assessment was introduced. The group gathered again around eight posters, four in English and four in Thai. Lynn Dicks, researcher on insects and pollination based at University of East Anglia, and one of the Coordinating Lead Authors of the IPBES Pollination Assessment, joined Ro hill for this presentation.

What are pollinators and why are they important?

More than a 100 people were involved in writing the IPBES Pollination Assessment. As a result, there was a lot of scientific knowledge on pollinators and pollination. There was also a process to bring in ILK. Ro Hill was involved in

19. De la Cruz, Martinus, and J. Badianus. 1552. The Badianus Manuscript. Codex Barberini, Latin 241: John Hopkins Press in 1940 published from original found at the Vatican Library in 1929, written by Martinus de la Cruz in Mayan, and Juannes Badianus, who translated the text into Latin.



Group discussion about the Pollination Assessment findings on the values of pollinators. Photo: P. Malmer

writing a chapter on the biocultural values of pollinators. Pollinators are animals that are important for moving pollen from male to female flowers. Bats, birds, beetles, wasps and moths are among the world's pollinators. There are concerns on the declines of these animals. Around 90% of all the wild flowers in the world rely on pollinators to some extent.

One participant mentioned that rooibos is germinated by an ant, but it is not considered as pollinators. Why were germinators excluded from the Assessment? There are many different plant-animal interactions, such as seed dispersal. Another participant said that the scheme is very beautiful but things are much more complex. For example, rivers transport seeds. Even if it is not pollination, it should be part of this scheme. The assessment is a reductionist scheme of the natural world, focused on a single aspect of the whole ecosystem. It was explained that pollinations and invasive species are part of some of the thematic assessment of IPBES. For other assessments, such as the Regional Assessments, there is a more integral and holistic view. Pollination Assessment was made over two years, whereas most IPBES Assessments are done over the course of three years.

The importance of endemism²⁰ in pollination was noted. Some plants are reliant on a single pollinator. Those things are

covered in the main text of the assessment. There are extremely specialised plant-animal interactions. The Brazil nut example is excellent because it fully depends on wild bees.

Summary of Assessment Findings: Values of pollinators

Economic valuation has been a very important part of the assessment. Pollinators are worth 170 US billion per year. However, this number is only based on crop production. Yet, there are other “non-economic” values, for example healthy diets (pollinator crops are a key proportion of vitamin-rich and nutritious food crops). It was said that 1/3 of all the fruits produced globally are dependent on pollination.

Many pollinators have a key cultural importance for IPLCs around the world. For example, the Guna Yala place a substantial cosmological importance on pollinators. Also, pollinated fruits have a symbolic importance for the Guna Yala and they are used as political symbols. Values related to beekeeping and honey hunting go well beyond the economic values from crop production. There are cultural values of pollinators, as a source for inspiration in literature, art and music. Beekeeping and honey hunting are extremely important for many different societies around the world. There are some case studies of honey being used as medicine. Pollinators values in regeneration are also mentioned in the Assessment. In the Summary for Policy Makers the central

20. The condition of being endemic, or restricted in geographical distribution to an area or region See: <https://biologydictionary.net/endemism/>

role of pollinators in ecosystem functioning is highlighted. It was commented from participants that Indigenous peoples are often pollination managers, not just honey hunters. However, there are also places in the world where honey-hunting practices (e.g. in South-eastern Africa) are unsustainable, where the trees are destroyed to obtain honey, e.g. by fire.

Summary of Assessment Findings: Status and Trends of Pollinators

The main message from the Pollination Assessment is that wild pollinators seem to be declining wherever we do have information. But managed pollinators (e.g. honeybees) are increasing globally, except for stingless bees. There is not sufficient information available to determine the status of stingless bees. Honeybees are doing quite well, although they are in trouble only in some specific places where there is disease or where they have been very intensively managed.

There is very good information about vertebrate pollinators in most parts of the world. 16.5% of the vertebrate pollinators are threatened by global extinction and this number is even higher, 30%, in islands. In Europe, the decline in insects are incrementally slowing down, but there is no data for much of the rest of the world, at least not within science. Some important findings are the patterns of widespread decline in North American bumble bees, but also in this case, there is not enough data outside of Europe and North America to properly assess status and trends. Wild pollinators have declined in North West Europe and North America, but there is a data gap for the Asia Pacific region – although there is recognition of the impacts of climate change and unsustainable harvesting. In many cases, European bees are outcompeting local species.

After this overview, participants wondered: What are the causes of decline? It was explained these include land-use change, disease, climate change, intensive agricultural practices. These drivers are going on everywhere. Do we know what is the biggest driver? Lynn Dicks explained that it is very difficult to link drivers with specific declines, because many of these drivers happen simultaneously and interact in complex ways (invasive species; land use changes; disease; climate change; pesticides; land clearing, etc.).

Summary of Assessment Findings: Risks and Responses for Pollinators

The Pollination Assessment was trying to assess how society has responded to pollinator declines. For pathogens, the problem is the lack of regulations in trade of bees, which often results in the spread of diseases. For example, bee trade has carried some viruses to Australia. Further, insecticides and fungicides have a direct impact on pollinators. After the Assessment was finalised, the strong negative impact of Neonicotinoid insecticides on bees and other insects has been clearly established²¹. Fertilizers reduce the species richness in

grasslands which affects pollinator habitats.

Suggestions for solutions have been identified in the Assessment. Though we still do not have enough scientific knowledge for many of these tools and ways forward. The Assessment points to supporting organic farming, and the role of kinship and relationships with pollinators based on ILK. It is important to also find alternatives to pesticides. Restoration also came through as a keystone strategy of protecting bees and other pollinators. There is a whole list of different responses to be considered. One of the responses is about changing human relationship with nature, including patterns for food production and consumption. This is a long-term solution, but it is a very important one.

Session 4: Discussions of key messages and local experiences

In session 4, participants reflected over the three areas of summary of findings from the pollination assessment that was presented in session 3: values, status and trends, and risks and responses. The discussion took place in three groups, each group being assigned an area to discuss. Finally, the groups shared and reflected the three areas together.

On pollination values

The group thought that values seemed to be framed in very broad terms in the key messages, and there was some imbalance between different kinds of values. It was not clear whether all the cultural aspects discussed during earlier sessions and in particular in the presentations by the ILK holders, really were well articulated in the key messages? Cultural aspects may not be very well understood, e.g. honey used in wedding and other ceremonies by the Ogiek people from Kenya (and cacao in central America). Is there a way to better capture cultural aspects? However, in the SPM there is reference to identity and a number of cultural practices; the full assessment report contains details about cultural values for IPLCs, in particular in Chapter 5.

Another reflection was that the word “values” often is equated with economic values. There is often a general characterisation of values and not all on them are discussed at the same level. Values could be sorted into different levels of importance e.g. some of the clusters, such as ‘economic’ values and ‘biofuels’ may not be on the same level of abstraction. If revisited, perhaps the clusters could be placed on different levels? It was noted the term “values” seems to be understood differently in different languages and cultures. In Spanish, for example the term “valor” has connotation with mere financial valuation rather than multiple and diverse values. It was discussed whether there might be a term that better represents the diversity of values that we are dealing with?

There was also a reflection on the political value of pollinators. One of the Indigenous participants described how they measure the extent of their territories by thinking how far do pollinators roam. Thus “pollinators can be used

21. <https://www.efsa.europa.eu/en/press/news/180228>

for political claims, as a tool for cultural governance”. Values from pollinators for Indigenous peoples can be expressed in the way that the habitat of a pollinator is considered sacred. For example, for the Guna people there are sacred sites which are not touched, where the bats live. They become community-conserved areas. In this context, pollinators also have values for conservation, as catalysing conservation. For Guna people pollination also occurs in the ocean, during the fertilization of coral reefs so it is not a concept related only to animal-plant interaction, there are more dimensions that they identify in their territories.

In spite of limitations, this shift towards pluralistic valuation which is put forward here by IPBES, is already a huge accomplishment in itself. It is a pity that financial values always tend to win and this is a key reason why politicians always try to prioritise economic valuation. The conclusion from this group discussion was the recognition of the importance to always remember that values are not just economic. There are many other values, and it is important to give them equal justice – not least for pollinators and pollination.

On status and trends of pollinators

This group discussed why don't we have enough information for the status of pollinators? Something is missing from the picture. Information about pollinator status and trends from the local systems and ILK appear to be missing in the analysis of the assessment. It was suggested that it was hard to find the entry point because the assessment is so focused on pollinators, though if the focus was more open would it be difficult to get the local perspective? What have we learnt from the ILK holders that presented earlier this afternoon – how did they reflect on status and trends? An observation was that everybody started from the holistic perspective and then only later talked about pollinators when they presented their cases. If you start from the system level it can bring in a different perspective on pollinators as a part of a greater whole.

An example was brought up, that the concept of pollination as such does not exist in some contexts. For example, for the Ogiek people, but there is still a direct association between the bees and the plants. Honey is a community asset and comes in different varieties. Bees and insects visit different plants, and you can tell what plants they are collecting pollen from by the taste of the honey. The trees that are visited by the bees are sacred, they form part of the community heritage. The vastness and abundance of the forest varies with the bees. Another important aspect are the products collected by the bees, such as the pollen, the wax, etc. With knowledge of these substances – you can infer and understand relationships. This became an entry point for talking about community-based monitoring and indicators. When do we know there is enough data? It depends on the

question being asked.

The way community-based monitoring and indicators systems (CBMIS) work is that communities are allowed to determine what the important indicators are. Meaning, they identify the issues that are more important to them. As an example, for one community in the Philippines, the most important festival is the Bee Festival. So, for them, what would be the most important indicators? What are the reasons that caused any cancellation of this festival? There is also a connection between how plants behave and bees behave. For example, swarming of bees are indicators of production. Sometimes you place beehives and they take time to nest. For communities, this is about observation of processes; they know what type of trees bees want. In northern India, in the landscape of the Naga people, for the stingless bees, it is about the oak trees. They don't do the rituals that surround these relationships anymore because of Christianity and furthermore there are questions surrounding land management in Naga country. They observe that they used to see a lot of bumblebees, but that they don't see them anymore. The role of rituals was emphasised and that the status of bees are indicators of status of the environment. Decline of ritual is an indicator of decline in ILK. Another example was that in Xingu, Brazil, young people did not know the names and diversity of many bees, this could also be an indicator of erosion of ILK.

On risks and responses for pollinators

This group spoke about the risk of losing ILKP about pollinators, and about education and communication, which was mentioned in the full Assessment report, but is not mentioned in either of the key messages from the SPM that had been brought up this afternoon. Indigenous practices such as rotational farming is in the Table of Responses of the SPM, and it was suggested they could perhaps be made more prominent? In relation to responses – rotational farming supports pollinators, and is an additional approach to just setting aside protected areas. The diversity of approaches for managing pollinators is important.

Indirect risks appear to be difficult to articulate in the Assessment – such as marginalisation of ILK, and lack of capacity to enforce existing rules and laws. This seems to be missing in the key messages. This gap may have been the result of the lack of ILK representatives in the author teams, and lack of social scientists and similar. It was commented that not including ILK could be a risk, rather than it “posing an opportunity” to incorporate ILK, as stated in one of the recommendations. Weak governance and lack of law enforcement is impacting on the abundance of pollinators – in the key messages on risks that was presented these were not included, and could be good addition, if it is not captured and articulated elsewhere in the assessment.

It was applauded that the IPBES SPM supports biocultural

approaches to conservation. This is a major accomplishment in itself. Some dialogue participants asked, “What do we do next?” “What can our communities do to support the uptake of these findings?” One risk is the lack of dissemination of this information and capacity building of the community as to the importance of pollinators. The importance of education did not make it to the key messages.

As an example of ways forward, it was mentioned that IPBES is developing a policy support toolkit to improve policy-making at multiple levels. IPBES has already developed a policy support tool box and public repository available on-line to support sound decision-making. A suggestion was made about the importance of building committees or structures where all areas of government are involved to bring the uptake of the outcomes of the assessment forward, so that everyone is connected across the potential threats, mainstream information to other sectors etc. – not just in biodiversity and agriculture, but across all sectors. For example, engaging big business would be very important in IPBES discussions, as they are potentially the drivers of significant change. An important response generally, would be to change the whole societal system, finding ways to avoid rewarding the destruction of the environment, and remove perverse incentives. A final question was posed, “what is the potential role of the Insurance sector – in terms of managing risk, and driving change?”

Plenary discussion on values, status and trends, and risks and responses

In the reporting back from the groups, additional observations and suggestions came up, such as that instead of speaking of “healthy human diets” we should be speaking about food sovereignty. This was recognised as a good idea. However, it was explained that the term “food sovereignty” was removed from the SPM in the Plenary negotiations. Further on this, it was commented that it was important that IPBES has opened a door to conversation with other knowledge systems. Conversations on biocultural values, economic values and food sovereignty are now on the table together. Yet, if governments throw out concepts like food sovereignty this can be potentially problematic. IPBES is focusing on multiple values, and it expands the values basket by recognising cultural values and regulating services. Although it may be difficult to quantify some of these components, they should still be included in policy and decision-making.

It was said that when we speak about the environment, we are speaking about matter that affect the whole world. As an example, palm oil is expanding very fast in many tropical and subtropical countries due to its commercial value. This is one of many such trends where it is critical to illustrate the diverse values of landscapes that get replaced by palm oil, in

order to prevent this from happening.

Regarding Status and Trends of Pollinators, it was discussed why some countries have data while others do not. It was mentioned that what is missing in the pictures is local information in terms of ILK, and how ILK could contribute to the whole picture. Community-based indicators could be useful for tracking the status and drivers of pollinators. Communities conducting community-based monitoring should be allowed to decide what should be monitored and how it should be monitored. For example, trends in certain rituals (e.g. if a ritual is not conducted perhaps this is a sign of environmental change in itself). The number of beehives for each migrant and local bees can measure how population increase or decrease in areas with beehives settled in forest for honey production, just like Karen people’s recent practices. Additional examples are how the ownership of lands and resources are changing and how this affects knowledge transmission to the young generations.

Many indicators of environmental change are related to ILK loss and erosion, and ILK loss translates into much more environmental degradation. It is a vicious circle. However, the realisation that the evidence shows that pollinators are declining has led to political will to protect them. So, this kind of information has to be available to trigger collective action too.

Finally, it was once again stressed that the report from this dialogue should be translated into many languages, so that all contributors can understand and see their contribution – even though the use of specific terms like “food sovereignty” can be red flags for some of the governments. There is different terminology for different cultures, and there is also an own discourse and terminology required by Indigenous peoples. In addition, there was a need expressed to get the whole Pollinator Assessment report translated into Spanish – not just the SPM.

Session 5: Introduction to the Hin Lad Nai community

Prasert Trakansuphakon, Director of Pgakenyaw Association for Sustainable Development (PASD), then introduced Hin Lad Nai, the community where the group were invited to stay for the coming days of the Dialogue. He is himself a leader and practitioner of social development among Indigenous peoples in Thailand and Southeast Asia, and also a scientist. Pgakenyaw means “Karen” in their own language, and PASD works in support of Karen customary practices, knowledges and livelihoods. Prasert Trakansuphakon is part of the group of people that initiated the Dialogue, and has since then been heavily engaged in the preparation in Thailand, together with colleagues in PASD and IMPECT, and the community of Hin Lad Nai.

The people of Hin Lad Nai are looking forward to welcoming us, he said, and we will be staying with them in their homes. The villagers will be our local guides and



The community of Hin Lad Nai.
Photo: D. Crimella

pollination experts, that we will exchange knowledge with and learn from. The community of Hin Lad Nai has been engaged in mobilising their knowledges over a long time as a pathway to recognition of Karen peoples' rights to their culture and territories. They have been part of piloting the Multiple Evidence Base approach²², and were proud to be able to share their knowledges and experiences from managing their Karen rotational farming system, in ways that are benefitting pollinators and pollination, as well as the

22. See: <https://swed.bio/reports/report/mobilizing-traditional-knowledge-innovations-and-practices-in-rotational-farming-for-sustainable-development/>

biodiversity conservation at large.

There will be translators between Karen, Thai, English and Spanish, so everyone can talk with one another. The community will bring us to their forest and rotational farming system, where many pollinators live, and where bee keeping and honey harvesting are important sources for community livelihood, income, food and spiritual values, as well as for the health of the ecosystem. Prasert also provided guidance about how to behave along with what is culturally appropriate in the community.

Box 2. Introduction to the Hin Lad Nai community

The Hin Lad Nai community is situated in Northern Thailand, Wieng Pa Po district, Chiang Rai Province. It is located between the National Forest Reservation Area and the Khun Jae National Park, about 130 km from the city of Chiang Rai. The community land is a hilly forest area throughout which more than 14 small streams flow. Community forest covers 3110 ha, while agricultural land is approximately 570 ha.

They are Karen people, or Pgakenyaw in their own language. The villagers of Hin Lad Nai believe in both animism and Buddhism. Hin Lad Nai is a small village, with about 20 households and some 108 people. Tea grows wild but is managed and pruned to get the best leaves, bamboo shoots are harvested, and honey is collected in the forest from carefully

placed bee-boxes that facilitate collection and enhance harvest. These are the main sources of cash income. The rotational farming system contains an exceptionally rich biodiversity of edible cultivars and semi domesticated crops. No less than 207 species and varieties are found in the rotational system, providing the base for a rich, healthy and tasty diet. Moreover, it is the home of a rich diversity of plants species, and creates shelter and habitat for a wide range of animals, birds and insects during the different stages of rotation. The community also grows fruits and collects forest products such as tea, bamboo shoots, and honey, which are their main source of cash income. They also breed pigs, hens and buffaloes.

Box 3. Changes, responses and victories in Hin Lad Nai history over the last 40 years

In the 1980s a logging concession destroyed almost all of the community's forest. In 1989, when logging finally was forbidden by the Thai government, the community started to recover and restore their forest. In 1992, the Thai government declared Khun Jae National Park nearby, then ordering the Hin Lad Nai community to move out of their forest. However, they joined forces with other organisations, such as the "Northern Farmers' Network." A series of protests and actions were taken up, and in 2003 Hin Lad Nai was finally officially recognised. In the meantime, the community has reforested 80% of the logged area, and also brought in new sources of incomes from the forest; that support their livelihoods and contribute to the conservation of the rich biodiversity

In 2013, Hin Lad Nai was declared a "Special Cultural Zone", which is a mechanism for supporting the Karen people in recognition of their cultural rights and their ancestral territories based on the framework of a Cabinet Resolution August 3, 2010, from the Thai Ministry of Culture. A "Special cultural zone" is a space to maintain and recover Karen traditional livelihood based on traditional knowledge and practices, integrated with appropriate scientific knowledge that is consistent with the current local context. It implies self-reliance based on Indigenous knowledge and practice, and to take care

of natural resource in sustainable ways, that support the Sustainable Development Goals at all levels.

The same year, (2013) Mr. Preecha Siri, one of the local leaders of Hin Lad Nai, received a Forest Heroes award at the United Nations Forum on Forests (UNFF) in Istanbul, for leading their struggle against the logging company, and then leading and organising the successful restoration of their forest.

In order to increase their income, the community created their own honey brand, called HOSTBEEHIVE, which is 100% wild honey from Hin Lad Nai. This is marketed through the Karen Sustainable Network. The branding is also seen as a tool for increasing the understanding, appreciation and recognition of the Karen Livelihoods and their cultural and territorial rights. As an example, L'Atelier de Joel Robuchon, a Michelin Star restaurant in Bangkok, uses their Karen honey. There has even been a chapter book written on "Bee Whispering" among the Karen, and "Honey Journey" is a workshop on the techniques for honey production among the Karen, in which many University students are involved. PASD and the Special Cultural Zone network have made a cook book titled, "Food in Rotational Farming" to promote rotational farming diversity of food products as tasty food supporting biodiversity.

Day 2: Walking workshop to the northern catchment forest, Hin Lad Nai

Early morning the second day, the international participants travelled from Chiang Mai to the community of Hin Lad Nai in Chiang Rai province. They were warmly welcomed by the community, and introduced to their host families, to stay for the coming three days. After a welcoming ceremony and introduction, all set off for the watershed area, where discussions in groups about the key messages of values from the pollination assessment took place.



Session in the community hall. From the left: Hin Lad Nai shaman Hpa tij Poonoo Papa, elder Pricha Siri, Prasert Trakansupakhon and Álvaro Fernández Llamazares. Photo: J. Bumroongchai

Session 1: Welcome to Hin Lad Nai and inauguration

The District Governor Mr. Prasert Jitplichip welcomed the group and stated that Hin Lad Nai is a village that has taken care of the forest very well, as their livelihood is very much related to the forest. He also invited participants to visit the annual district festival of Wiang Papao District, that was going on the same day, in case there was time. Hpa Ti Noo Papa, the community Shaman, led a welcome ceremony where he prayed and blessed our spirits.

After this, the local leaders Pricha Siri and Chaiprasert Phokha, together with the shaman Hpa Ti Noo Papa, told some glimpses of the local history of the community. They spoke about the importance of rotational farming for the Karen people. They take pride in eating primarily locally

grown-products and in their system of shifting cultivation in which fields produce crops on a multi-year cycle. This system gives soils time to replenish their nutrients. Unfortunately, the government Forest officials do not tend to recognise this form of customary management. Yet, they try to maintain and redefine the customary laws and spirituality of the community. The leaders explained the importance of the traditional songs of the Karen and storytelling as a way to transmit knowledge from generation to generation. For example, they have a special ritual for every sickness, and that there are many rituals to promote health.

Spiritual obligations are central to the community's practice and existence. There are many different rituals. The Moon cycle is important and there are ritual behaviours associated with that. The reincarnation of the spirit is a key part of the belief system, it was explained. The elders also spoke about the importance of the Hkle, or the Banyan tree (*Ficus religiosa*) to the Karen people. They believe that the Hkle is the grandmother of the Karen people.

Chaithawat Chomti, a younger Karen leader, said that in general, the government agencies do not respect the livelihoods of the Karen people. "We can live happily and peacefully with the forest", he said. Yet, the Ministry of Natural Resources and the Environment officials sometimes do not understand our way of life. He emphasised that the Karen customary tradition is to peacefully look after the forest. This includes the different aspects of education, employment and livelihoods through mixed cropping.

Chaiprasert Phokha then spoke about the logging concession in the 1980s. The forests of Hin Lad Nai are nowadays mature again, with tall trees, but in the 1980s a logging company was given a concession in the area without



Shaman Hpa tij Poonoo Papa, Hin Lad Nai. Photo: J. Bumroongchai

any consultation with the community. The company cut all trees, including the communities' sacred sites. We lost the big trees, but we took a decision together to reforest the area, he explained. The community took care of the area; they constructed firebreaks and guarded the land from wildfires. And luckily, the forest grew again. Now that the forest is thick, people from the government came to the community and told that they wanted to declare the community as part of a National Park. There was a declaration that this area belongs to a watershed area and there are plans to relocate people again, although the Karen people have organised themselves to protect the forest, and that is why it is maintained.

"When we asked if we can live in the National Park – we were told 'No'. But we can't accept the announcement of the National Park designation in this area that does not allow us to stay here and continue our practices. We lived here before the logging concession, and we rehabilitated this forest".

The plan to declare the community as part of the National Park has been delayed until now.

Nivet Siri, another of the local leaders explained, "The forest needs to stay with the people. We can co-exist with the forest; and we have Indigenous rights to do so. We can live peacefully with the forest in the future, and it is important to prove that villagers can take care of the forest. This forest is very good, because we are taking good care of it, and its biodiversity can provide us with a healthy life."

Daojai Siri, a leader from the women youth team, stated that the youth group in the community should be engaged in social and community development. The community struggles with land rights: they have to prove that they can live from the forest. This has driven the development of a

youth group in the community: to prepare for globalisation, in terms of development and economic opportunity. The community needs some money. They have enough rice to eat, but economic development provides some security for the community. The natural resources have to be developed; as an example, tea in the past was cheap, but it is worth more now, so there is opportunity there. The youth of her generation have to band together with other Karen, and show the they can co-exist with the forest. They produce honey and coffee as well. But they also need to educate outsiders, to prove they can live with the forest, take care of the forest and that their way of life is tied to the forest, and should be recognised by the government. It was also stressed that a larger network at provincial and regional levels allows them to recognise their livelihoods and new ways of life. So, they move slowly and make progress as a network.

Following this, there was a question about the local impacts of climate change in the area. The leaders explained that the blame has always been put on the people who live in the forest, some were even arrested. Some were not allowed to practice agriculture. Their forests store large amounts of carbon, and they grow food crops. The whole cycle of the rotational farming lasts seven years. This allows the soils] to regenerate their nutrients and store carbon. They have measured the contribution of their forest to carbon sequestration, for carbon credits, but this is not the solution to global warming they mean. The leaders stated that perhaps the focus should be on reducing petrol use and industrialisation, to have an impact on global warming.

Prasert Trakansuphakon explained that one day a week in the Hin Lad Nai school, the teachers are allowed to teach traditional culture. He hopes that someday information about food security, Indigenous folk tales and documents from this research will be taught by the youth members in the school, and build the link between elders and young people.

Elmer González from Guna Yala in Panama said that he is very grateful for being at the Dialogue. He spoke in Guna language and said that there are many similar things between Indigenous peoples. Among the Guna, the umbilical cord is put with a seed in the land, and it is the community responsibility to protect the tree that emerges from that seed and the whole forest. This is very similar to the tradition of the Karen people. He continued: "The transmission pathway, through song and oral traditions, is also very similar among the Guna. The Guna also sing to transmit knowledge, as the Karen do. They call the sea as 'grandmother', just in the same way that the Karen call the Banyan tree. When colonisers arrive, they hide in the coasts. The sea protected them. When your parents punish you, you look for protection from grandmother. It is not true that we damage the land, it is them who destroy the land."

There was also a question about hunting in Hin Lad Nai. It was explained that within an area of one kilometre around



The welcoming session ended with traditional music played on the “kwa”, a musical instrument made from buffalo horn and wood. The musician is the Karen elder Jorni Odochao. Photo: N. Crawhall

the community, no hunting is allowed. As such, species that were almost depleted, such as the pheasant, are now recovering in Hin Lad Nai. At the same time, they explained that because of the logging concession, many groups of monkeys are not present in the area any more. They used to see big groups of monkeys crossing farmland in the past, but that was a long time ago. They also explained that they hunt small rodents by trapping.

The session ended with traditional music. Jorni Odochao and Hpa ti Noo Papa, elders of Hin Lad Nai, played the “kwa”, a musical instrument made from the buffalo horn and wood. They believe that a god left for a while and that when they play the kwa, the god will come back to the village. They play for the god to come back.

Session 2: The walk to the watershed and the old forest

Before starting the walk to the watershed and the old forest, the revised version of the Free, Prior and Informed Consent were brought up, following the conversations on Monday. It was again stated that this document is meant to be a basis for work so that we can all respect the integrity of the knowledge being shared. The Thai version of the FPIC document was then red out and it was invited for comments again as not all villagers took part in the discussion the day before. With a few more suggestions included in the draft, it was left for additional reflection until next morning, when it was finally signed by all. (See Annex 4)

Maria Tengö then introduced the goal of the walk to the watershed which was to include a visit to one of the few large trees that were left after the logging concessions, and a symbolic place for the community. The walk would take workshop participants through the community-protected forest where neither hunting nor fallow agriculture are allowed.

In keeping with the Dialogue’s “walking workshops”, methodology, participants were divided into groups with each group also including one or two local experts as guides, who could offer reflections during the walk. Once each group had reached the forest, some of the key messages of the Pollination Assessment were to be discussed. Each group was provided with 2 posters, one in English and one in Thai, with selected “key messages” chosen from the section of the Summary for Policy Makers about “Values”. All groups were to be composed of both local Thai and external visitors, to ensure that there was maximum opportunity for learning and discussion across both ILK knowledge-holders, scientists and practitioners.

The goal was to answer the following questions: (1) How do the key messages connect with the information heard from Hin Lad Nai; (2) How do the key messages connect with your own experiences? and (3) What are the main strengths, weaknesses and gaps?

Each group would report back in a session for joint reflections upon return to Hin Lad Nai. Maria Tengö pointed out that every statement in the SPM comes with a confidence



The stingless bee (*Meliponini sp.*) is the smallest of the three bee species living in the forest around Hin Lad Nai. Photo: N. Crawhall

interval and that reflection on how confidence is conceptualised in ILK and how it is assigned in the scientific knowledge system should be a focus for each group.

Summary of discussions in the four groups during the walk to the watershed

About the forest and landscape around Hin Lad Nai

The walk passed through community conserved area. A range of useful trees and crops such as tea, coffee, and fruit trees are planted in the forest. Bees including the stingless bee variety are found within this forest and hives are placed here. As we walked through the community forest, the local experts showed a wide variety of medicinal and edible plants, both planted and wild. A range of “weeds” were explained to have values, as medicinal plants, spices, to control pest insects, and improve soil nutrition. Bamboo and rattan are used for materials, and they are now growing 9 varieties of bamboo. We saw a mix of fruit trees throughout the forest, including mango, lemon, lime, pomelo and persimmon. The most important income generating forest products are tea, honey, bamboo shoots, and betel fruit. The tea flowers are pollinated by both royal bees and stingless bees, though at different times of the year. One of the guides explained that

diversification makes him feel secure. Knowing that they have rotational farming, rice paddies, gardening, tea harvesting, small livestock and honey production makes him feel confident.

Management practices for bees and honey

As we walked through the forest we were shown the beehives that improve the habitat for different kinds of bees. Hollow trunks of larger trees are used to attract bees, as they have many small holes which provide habitat. Beehives are often placed in cavities, along steeper walls, and similar features of the forest for this purpose. It should be a shaded area, and close to larger trees. Certain trees also attract bees. To attract bees when first installing a new beehive some wax is placed inside the hive. The bees are not fed sugar and the bees choose to inhabit the hive.

They collect honey from honey bees (*Apis mellifera*), the royal bee (*Apis dorsata*) and stingless bees (*Meliponini sp.*). All of them can be found in the hives in the forest but also occur in natural habitat. The royal bee is larger and mostly finds holes in hollow trunks to nest. The royal bees stay in the hives from December to May, and have seasonal migration. Honey is harvested at the end of April or in May. One guide informs the group that the time of gathering the honey is important to ensure that the bees come back the year after. According to him, when flowers start to be scarce, it is time to harvest the honey. Also, some bee predators appear in May. When he harvests honey, he first asks for permission and gently blows menthe smoke into the hive to calm the bees. He leaves a comb for the bees to live on.

The honey can look and taste very differently over the year and even in the same season. It has different colours, from yellow to almost black. One guide explained that he knows which plants the bees have been collecting nectar from, based on the colour and taste (e.g. longan tree (*Dimocarpus longan*) makes honey very clear, rubber tree gives dark brown colour). When bees visit certain medicinal plants, the honey gets medicinal properties as well. A certain kind of bee comes only when the rice is flowering. When the rice is flowering the honey becomes a bit sour and white.

One of the local experts explained that he wants to expand his beekeeping. To do that, he first needs to make sure there is enough good habitat for bees. He needs to find a good shaded and cool place for the hives, and he wants to plant more flowering trees, such as rose apple (*Syzygium sp.*) that are appreciated by bees and birds. He wants to further increase the diversity and nurture a good environment for the bees.

It was also explained how bees and pollination here in Hin Lad Nai connect local knowledge with innovation. The community is testing new ideas, testing different bee boxes and different materials to develop and improve their practices.



The bee boxes are placed in strategic places around the forest, where the community knows the bees like to live. Photo: N. Crawhall

“Living with the bees” – cultural underpinnings of bees, honey and pollination in Hin Lad Nai

In one group, the guide who is a local leader, explained that the walk’s main purpose for him was to get the group to understand Karen’s relationship with the forest and the bees. The bees speak about the village through the honey. He mentioned that Thai people in general don’t see (and don’t understand) the connection – they just see it as a “normal” natural system.

There are many stories, poems and songs that connect the people in Hin Lad Nai, the bees, and the forest and that serves as a repository of knowledge and good practices. Hta is the poetry, stories, and songs told by the Karen people. Hta reflect the rich knowledge that Karen people have of their surrounding environment, especially of the variety of wild and domesticated plants and animals. One hta says that we have a relationship with the bees. This means that bees take care of the people and people reinvest part of the income from honey back to the forest - there is reciprocity. The guide further explained how bees are our doctors and our teachers. Bees in the hives serve as a role model for their lives.

This is further illustrated in the *hta* about how the Karen people should walk like the bees not like the hornets. This

hta means that the bees are examples of how we should live our lives, “When the bees fly, they fly better together” and look after each other and the whole community of bees in the nest. They live in harmony together, and increase the biodiversity in the forest with their action – like we should do. They collect nectar and pollen from a variety of flowers or plants in the forest, just like we do. The bees also look back to look forward when they swarm – we humans should also look at the past when we think about the future. In contrast, the hornets live alone and kill the bees.

Summary of discussion on key messages on values during the walk

Box 4. Key messages on values from the Summary for Policymakers discussed during Walking session 1

- Livelihoods based on beekeeping and honey hunting are an anchor for many rural economies and, are the source of multiple educational and recreational benefits in both rural and urban contexts (well established).
- A good quality of life for many people relies on the ongoing roles of pollinators in globally significant heritage as symbols of identity, as aesthetically significant landscapes, flowers, birds, bats and butterflies and in the social relations and governance interactions of indigenous peoples and local communities (well established).

Perspectives on the key messages on values

Generally, the groups found that they mostly agreed with the content of the key messages presented on the poster – even so, they spawned a rich discussion about alternate ways of articulating and talking about values, priorities, and additional reflections about values.

Several groups found that the messages in the IPBES assessment presented on the poster did not fully capture the intricacies of the relationship between the Karen people, bees and the forest, or with their own cultures around the world. The local guide in one group questioned the concepts of beekeeping and honey hunting. It is shallow and simplified, and describes an idea of a one-way process. For him, in reality, the bees take care of them (as described in the *hta* mentioned above). Further, “when placing a beehive, you are speaking with nature. You are inviting the bees to come. They can decide not to come. In that way they are challenging us”.

Similar perspectives were shared by representatives from other Indigenous groups. It was explained that the Mayan and Mesoamerican peoples historically had strong relations with the stingless bees. For the Ogiek in Keyna, collecting honey in the forest is ancestral practice. Keeping them in



Siwakorn Odochao and Nivet Siri were two of the Karen experts on pollination and pollinators that guided the group through the walking workshops in the Hin Lad Nai forest and rotational farming landscape. Photo: N. Crawhall

boxes is a more recent practice and it is still not commercial. There are relationships between people, the trees and the forest, but they are not expressed as pollination - “the concept of pollinators is for scientists”. The Ogiek also reflect that many birds are recognised for their role to plant seeds, but not as pollinators. Birds can be clan totems and they are protected. This also resonated with the ILK holders from New Zealand. Many felt it would be useful to re-phrase the message about the role of bee keeping and honey for local communities, so that it can better reflect Indigenous perspectives.

A suggestion for rephrasing the key message about the role of bees and honey to align the message better with ILK, was shared:

Bees and honey are fundamental to human existence for many rural peoples in a range of ways that underpin spiritual, cultural, economic and physical wellbeing. This spans from livelihoods based on bee keeping and honey gathering to mutually beneficial co-existence in rural ecosystems; and as cultural determinants and a source of philosophical inspiration.

Discussion on multiple values:

In many groups, there were discussions about how lack of rights and recognition has implications for the livelihoods and the different values related to pollinators and pollination (including beekeeping and honey). For example, in one group the local expert that guided explained that “they do not have the security to continue living as they have done, and that this affects their beekeeping practices. The security of beekeeping practices and honey hunting are under risk if the rights of the people are not recognised, including their land tenure. Rotational farming also depends on land rights”. He pointed out that beekeeping does not happen in isolation, but rather as part of a larger landscape. He said that we miss a part of the picture if we only look at beekeeping. The message should be about landscapes and integrated food production systems, where the main aspect to understand is the diverse niches that the agroforestry and rotational farming system provide to nature and people.

Most groups talked about the need to emphasis multiple types of values - the material, economic, cultural, and spiritual values. Several values were discussed across the groups, as exemplified in the following sections. It was found that the two key messages discussed were complementary - the economic values and importance for livelihoods are complementary with values for quality of life. “The economic income provided by honey is important but it is an added bonus to the happiness that bee keeping brings. These go hand in hand.” This is also relevant for the youth. Ninety percent of youth from Hin Lad Nai are still here in the village and many practice bee keeping. It is easier for them to get a decent income from honey than from going to work elsewhere and they enjoy the freedom to do it in a relaxed way here and enjoy the kinship and care while staying with family and community. According to one of the guides, nowadays, honey is the main source of cash income, complemented with other forest products, such as tea and bamboo-shot. Part of the income from the products, goes to a community fund, that is used for necessary or urgent collective needs and for develop and manage the community recourses. Income generated from the sale of honey is important to the community, but also the role of bees as pollinators was seen as being of great importance, and they were seen as an essential and integrated part of management of the whole ecosystem of forest and rotational farming areas. Hives produce well in the fallow sites, and the honey is less thick, and has a different taste. It was pointed out that the well-being of the bees is the well-being of the people and the land. Last, but not least, the honey provides well-being as a very important part of traditional medicine, both internally and for treating wounds.



Reflecting on key messages about values of pollinators, sharing own experiences while learning about Karen philosophy and practices during the walk.
Photo: M. Ferrari

Bees as indicators

An indirect value is that bees are indicators of change, and provide a way to speak to nature. For example, bees can give information about the weather. If the royal bee chose to build the nests low in the trees, there will be many storms in the coming season, if higher there will not be strong winds. Bee swarming indicates weather and environmental changes – the bee swarm follow the trails of accessible food. Bees also symbolise the cycling of the seasons, as different presence of bees occurs in different seasons, and they are part of the cycles of plants. From Myanmar it was shared how the community elders predict the weather through honey, if it is sticky the rain will come soon, if not it will come later. Further, from the Mayan communities there are charts illustrating predictions of yield from different crops based on the bees' honey production.

The cultural values of bees

The Karen people have a strong cultural connection to bees through poems and songs, through which the actions of bees are a metaphor for human behaviour and governance, as has been exemplified above. Beeswax further plays an important cultural role, used in rituals and for communication with the spirits. Beeswax, chicken meat, and whisky are the most

important ritual offerings, and the wax is burnt in the sacred site when a person dies. “For survival you must have two things: rice to eat and bees wax for use in prayer and ritual”. Women also use wax on the cotton thread when weaving, and this is an important part of the traditional knowledge of Karen women. Others reflected that bees are an important symbol of harmony between people and nature in many parts of the world. Bees are also important educationally in communicating the importance of biological diversity.

Bees also feature in songs, proverbs and ceremonies. A ritual called *Kwae Phu*, which means “Grandpa Bee ritual”, was shared with the group. This ritual is performed at the foot of a dead, dry tree, to call the spirit back to its owner, because it is believed that dead, dry trees are mediators between life and dead. Dry trees are also a good place for the *kwae*, the stingless bee (*Apis cerana*) to stay because most of them have holes for the bees to stay. That is why the ritual performed at the foot of the dead, dry tree is called *Kwae phu*, or “GrandPa Bee ritual”.

The representatives from different parts of the world also shared how bees and honey have important cultural roles; bees feature in many Ogiek songs, and the Mayan and Mesoamerican people were explained to have strong relation with the stingless bees that are viewed as sacred.



Hin Lad Nai leader Chaiprasert Phokha reflecting about values of pollinators under the big, old tree at the watershed. Photo: J. Bumroongchai

Plenary discussion on values

A representative from each group reported back to the plenary upon returning to the community hall. In the discussions, it was clear that pollination and beekeeping are useful entry points to explain and communicate how nature and culture are woven together and the reciprocity of living in the forest. Several comments from some discussants, reinforced that security of beekeeping practices and the pollination bees perform are under risk because of lack of rights, something that could have been better highlighted in the Pollination Assessment. It was noted that the relationship with the bees also enhances relations between people and nurtures social cohesion. Other aspects that were discussed include the idea that enhancements and innovations by IPLCs need to be recognised and communicated, and the importance of enhancing beekeeper networks.

At the end of the plenary, a Karen elder shares a song about bees. The song says that to create the magic power, you need to do like a bee. You have to take care of your group. This creates power. You have to behave like bees.

Session 3. Introduction to the network of Centres of Distinction on ILK

After dinner, the group of guests gathered together with their Karen hosts around a heating fire for informal reflections and sharing. The point of departure was to introduce the network of Centres of Distinction on ILK and its roots in Indigenous cultures and identity, intimately linked to Indigenous peoples long standing fight for recognition. This network is composed of organisations implementing programmes of work on ILK in different global regions, and was launched in Kuala Lumpur in 2016 alongside the 4th Plenary Meeting of IPBES. Each Centre has its own distinct activities and strengths, but each fully embraces networking together to build a stronger institutional framework for promoting ILK at policy arenas and knowledge platforms at multiple scales, while recognising the inter-linkages between biological and cultural diversity. This network is an institutional mechanism for identifying and joining up ILK holders and experts in geographic regions or thematic areas of expertise, creating focal points for collaborative work with each other; and with governments, scientists, researchers and policy specialists.

Joji Cariño and Prasert Trakansupahkon, who are two of the founding members of the network, introduced the session, then handed over the discussion to the community elders of Hin Lad Nai and Karen people present.

Dilok Trakulrungsamphai, Pricha Siri and Jorni Odochao, elders of Hin Lad Nai, opened the session by talking about the situation of the Karen, and what pathways they saw for the future, where education of the youth, and inclusion into the school curricula is one of their main strategies for change. A Karen youth, Siwakorn Odochao, said that he mostly learned everything he knows from the elders. A lot of knowledge about nature is in the community, he stressed, and as Karen people, they like to manage the knowledge by themselves, independently. “But, we also need to go together. Science and Indigenous knowledge are two legs; we need both legs to be able to walk well”.

Joji Cariño pointed out that the IPBES Conceptual Framework recognises scientific knowledge and ILK as distinct knowledge systems with equal standing. Unfortunately, the diversity of cultures is not always understood and respected. Imposition of religion and development has led to a denial of diversity and to marginalisation and exclusion of Indigenous peoples. Because of this history, Indigenous peoples in many countries have started movements in support of Indigenous peoples’ rights. The recent emergence of the Network of Centres of Distinction on ILK is to exercise Indigenous peoples’ cultural rights and to enrich intercultural space and dialogue between knowledge systems. She narrated how Indigenous peoples’ movements for self-determination emerged. In the Philippines, the movements started in reaction to dam constructions in the 1970’s. This was a starting point for the



Evening discussions around the warm fire were filled with stories about Indigenous cultures and identities, in northern Thailand and other parts of the world. From the left: Joji Carino, ILK Centres of Distinction, Prasert Trakansuphakon, PASD and Karen elder Jorni Odochao. Photo: N. Crawhall

process that led to the UN Declaration of the Rights of Indigenous Peoples in 2007, after a 20-year struggle. It became a very important step forward in the recognition of the culture, knowledge and rights of Indigenous peoples.

The Indigenous peoples engaged in the CBD and in the IPBES started to organise themselves as a network of Centres of Distinction of ILK as a way to continue on this pathway. As of today, there are thirteen members of the network located in different regions. The network has four main strategic priorities for action: (1) Engage in IPBES and show the relevance of ILK at the global level; (2) Ensure the transmission of ILK in communities; (3) Promote community-based participatory research guided by their own needs, and through their own ways of knowing; and (4) Foster community exchanges to promote mutual learning and opening up intercultural spaces.

Joji Cariño pointed out that cultural institutions are inherently reflexive institutions and that they offer opportunities to reflect on ways of promoting and protecting

collective knowledge. She said that the Network of Centres of Distinction on ILK collaborates with the International Indigenous Forum on Biodiversity (IIFB), the Caucus for Indigenous peoples that gathers during the global CBD meetings and with the International Indigenous Forum on Biodiversity and Ecosystem Services (IIFBES), the Caucus of IPLCs during the IPBES sessions. Given that a large part of the remaining biodiversity lies in the territories of IPLCs, she underlined that every Indigenous community is a Centre of Distinction on ILK in itself, engendering and fostering the interrelations between biological and cultural diversity.

The audience was very inspired to see at first hand that Indigenous peoples are fighting for the same issues in many different places, and brought up their own experiences, such as from the Maori people, that works with local schools trying to bring together scientific knowledge with local Native wisdom so that the children have the tools to grow strong and wise, as part the Maori fight for revitalisation. “If we heal the land, we heal the people”.

Day 3: Walking workshop to the fallow areas

When the group gathered in the morning, thoughts were shared on the day before. The discussion led to further insights on the different layers of information in an IPBES assessment, and the relation between the key messages in the SPM, and the richness of underlying knowledges. Another stream in the deliberations was on the process of scrutinising and approval of the SPM, through government negotiations, in relation to the gathered evidence in the full assessment document. The importance of inviting contributing ILK holders in the conversations early on, in the formulation of key messages became a key insight from the morning gathering, before setting off to the fallows and continued dialogues on new key messages.

The rest of the day was then spent in a walking workshop in the fallow areas of the rotational farming system in Hin Lad Nai.

Session 1: Plenary before the walk, reflecting on outcomes of day 2

Ro Hill, as one of the lead authors of the pollinator assessment, observed that only a couple of the key messages from the pollinator assessment had been presented for discussion, but thought this was a good approach as the full IPBES pollinator assessment report is very dense. She noted that there are messages in the SPM that do cover some of the concerns and gaps that were highlighted in the discussions yesterday. In addition, many of these are well represented in Chapter 5 of the full report, which deals with Biocultural Diversity. The SPM has been scrutinised line by line by government, and then, following response from the authors, finally been adopted. The key messages have to mirror the evidence gathered in the full assessment report, but still governments need to approve the SPM. The Assessment does recognise that pollinators are a source of multiple benefits to all, as pointed out in the discussions yesterday.

It was brought up that not all participants were satisfied with how the messages were framed in the Pollination Assessment – the distillation of large amounts of material into key messages is an enormous challenge. There was a need to make sure that the messages are phrased in a way that is more engaging of ILK. The reciprocity of the Karen and their ways of seeing the world was not well reflected in the messages that were circulated, some thought. In addition, there was a problem felt on the framing, that it shouldn't be on "keeping" or "hunting" bees, but rather on people living with the pollinators, emphasising reciprocity. It was then



Walking through the forest and forest gardens to the fallows.
Photo: J. Bumroongchai

suggested that some of the messages actually could be rewritten, in order to better capture the ILK.

Ro Hill read another key message, on the non-economic benefits beyond food provision alone, explicitly including art, music, religion, literature and inspiration, to emphasise that there are additional key messages in the Pollination assessment, that complement those that were discussed around the day before. She also recognised that IPLCs should have been invited to be part of the conversation earlier on, and that it is crucial to understand that the key messages as initially formulated by the authors, were substantially modified by governments.

The fact that many of the knowledge-holders during yesterday's conversations agreed with the content of the messages, was also recognised in the deliberations. One participant pointed out that we should maybe not concentrate on proposals for rewriting messages, but rather on what recommendations can be put forward for the next work program of IPBES and other assessments that might come. The focus should be on, "What happens now?" It is important for ILK holders to contribute to developing the processes forward. For example, to be able to put forward suggestions about the formulation of questions and topics for future assessments, how they are framed, as well as post-assessment activities, like this dialogue. The importance of how ILK holders can make statements about the IPBES process, and give suggestions of how to improve ILK involvement was stressed. This dialogue can be an opportunity for bringing up suggestions.

Another participant noted that from the conversations yesterday it was evident that the way in which the Karen people see themselves in relation to pollinators was very different to the key messages from the Pollination Assessment displayed in the posters. If government representatives are changing the text in the key messages at the last phase before adoption, then it was felt that comment needs to be made about the process and how it might be undermining the engagement and hard work of the people contributing to the assessment. It was proposed that decision-making processes should be explained better and then influenced to be enhanced.

A member of the ILK Task Force of IPBES noted that the pollination assessment was fast tracked, and also the first thematic assessment conducted by IPBES, and the piloting of the procedures for inclusion of ILK. The feedback provided in this dialogue is most valuable and will not go unnoticed in the further work of the IPBES. People were also encouraged to make critical comments to the draft of the coming Assessments, such as the Global Assessment and the Assessment on Values. It was explained that anyone can make comment on the text and the assessment authors have to respond and publish those responses online. If there is input and comments made from Indigenous peoples that the framing is all wrong – that would be helpful.

A participant commented that IPBES Assessments are not meant to be policy-prescriptive, but rather policy-relevant. We need to support the governments in learning and understanding, and to create dialogues and involve the governments as well as communities to generate interest and facilitate discussion and informed policy decisions. Everybody should go home and do that.

It was brought forward that if you don't go deeper in the actions at the national and local level, then you miss out on addressing the impacts on biodiversity and people. Thus, it is needed to ensure that IPLCs and their ILK is included in all processes. It is disappointing that so few Indigenous peoples have engaged with IPBES to date. But Indigenous peoples are decision-makers and policy makers in their own territories – who better to build on and contribute to IPBES than the Indigenous peoples who currently manage large areas of biodiversity?

One of the visiting Indigenous knowledge holders stated that, the Hin Lad Nai people are well placed to demonstrate how they have worked with biodiversity to rebuild the forest ecosystem. The ecosystem has shown them how to rebuild their lives and their diversity; regeneration of forest, regeneration of people. Regarding the concerns about how to fully include IPLCs in IPBES – the Karen elders that participate with us have already contributed significantly to knowledge sharing – but there are internal and external threats to sharing this knowledge – thus we must be careful. Careful about our territory; how we go about collecting and documenting ILK. This must be done the right way through community institutions. Here in the Hin Lad Nai, the Karen people have demonstrated how knowledge can be shared.

Session 2: The walk – rotational farming knowledge, practice and spirituality for biodiversity, pollinators and food security

The rest of the day was spent in the fallow system, which is at the hearth of the Karen traditional knowledges, practices and livelihoods. The process of farming includes many rituals for different steps such as selecting a field, planting, and harvesting. The fallow area is also good for animals, there is lots of food for them and good places to hide and nest. Something new in the last few years is that bee hives are placed in the fallow, not only in the forest as was done before. Similar as the day before, the walks through the area were guided by elders from Hin Lad Nai community. The impressions from the walks inspired discussions in the mixed groups gathered around posters in English and Thai, presenting a set of key messages from the Pollination Assessment. The first set concerned the status and trends in pollinators and pollination; the second set concerned Drivers of Change, Risks and Opportunities, and Responses.

The whole group walked through the village and up the hill, to reach the area for rotational farming. The four groups split up and followed their local experts and guides to a



Walking workshop in the first year of fallow, *hsgif*, after the farming year, *quv*. As usual, a bamboo hut has been constructed for resting during work.
Photo: D. Crimella



In the bamboo hut, participants share reflections on risks and responses for pollinators. Photo: D. Crimella

Box 5. About the rotational farming as practiced in Hin Lad Nai

When clearing a new field, the timber and bamboo is harvested and then the weeds are cut and left to dry out for a week. The plot is then burned for a maximum of 30 minutes. The burning season occurs before the monsoon.

The full fallow cycle has a length of 7-10 years. Crops are only grown for one year in one plot as the land loses nutrients for the plants. However, a range of crops and wild plant are harvested during the first fallow years. The regrowth of trees and vegetation from burned stumps is noticeably quick, the stumps are left burned in the field and are still alive.

The head of the village forecasts what plot should go to which family, according to availability and need. In this way, the cultivation system fosters equality and reciprocity within the community. All food produced from the plot is consumed and not sold. Nowadays there are other sources of income with tea, honey and other agro-forestry productions.

Planting of other food crops is also done in the field, such as cucumber, eggplant, and other spices. Altogether over 30 kinds of plants are grown in the rotational farming site each year, and

the seeds are collected and saved for the following year.

Women do most of the planting and the seed collection.

Following the rice harvest the first year the wild plants are growing as the fallow cycle begins. In the first year of fallow, root crops such as taro and potato are also harvested. In the 3rd and 4th year, it is possible to collect galangal (type of ginger) from the fallow, along with many other crops. Bees are needed as pollinators for all of the crops grown in the rotational site, except for the lemon grass and root crops.

There are different animals finding habitat in different stages of the fallow. Rats, birds, squirrels, wild boars, small tigers. Those find habitat in younger fallows, around 3-5 years old. Earlier it used to be more common to see also larger animals, such as deer and the wild buffalo, nowadays the biggest animal is the boar. Three years ago a large tiger was seen, but then it moved to a different location. Around the rotational farming areas, the forest is managed to create fire breaks. Here, large trees are left standing, but the forest floor is cleared from bushes and plants to control fire.

Box 6. Rituals in rotational farming among the Karen people of Hin Lad Nai

A number of rituals articulate the work in the rotational farming systems, for example rituals before planting and harvesting. Here are some examples:

The ritual for a good rice harvest. A bamboo stick used for planting rice is fixed in the ground, pointing right up at the sky to call for rain. The hole is poked in the ground and filled with some water. A prayer is recited: *“Make the stems of rice big like banana stems, the grains of rice big as cucumbers, the leaves of the plant big like banana leaves. Hide the seed in the ground so that ants would not eat it. Open yourself, o seed, if the rain comes, but hide yourself if there are thunders”*. And people then splash each other with water to call for rain. It was commented that in the Australian desert, the aborigines have a god called

Potou Pouri which is the rainmaker, and they also splash water on each other to call for rain.

“Ta se” ritual to call all pests away. This ritual is to “close the mouth” of all animals dangerous for the crops, such as wild boars. In a bamboo basket one male chicken, with its blood and feathers, yeast, rice husk and rice, barks are placed as an offer to the spirits with a wish that all pests would go away.

Ritual to the spirit of rice. In a cage just beside the field, a female chicken is placed to call for the goddess spirit of rice, or mother spirit of rice, to bring good harvest. This is decorated with bamboo flowers, to wish that the rice would be healthy like that. The chicken is then separated and each part is cooked in a specific way.

Summary of discussions on risks and responses held in the fallow area

Box 7. Key messages related to risks and responses from the Summary for Policymakers discussed during Walking session 2

- I. Managing and mitigating the impacts of pollinator decline on people's good quality of life could benefit from a number of integrated responses.
- II. Food security including local peoples' ability to determine policies for food and crops
 - Protection of the land, waters, air, vegetation, and the different cultures, and the links between them
 - Strengthening traditional governance that supports pollinators
 - Prior and informed consent for conservation
 - Recognising tenure and important agricultural, biological, and cultural heritage
 - Framing conservation to link with people's values
- III. Practices based on Indigenous and local knowledge can be a source of solutions to current challenges. These practices include:
 - Diverse farming systems
 - Favouring heterogeneity in landscapes and gardens
 - Kinship relationships that protect many specific pollinators
 - Using seasonal indicators to trigger actions
 - Distinguishing a wide range of pollinators
 - Tending to nest trees, flora, and other pollinator resources

respective site that they knew well. Each group saw a first or second years' field, and some groups have several fields in different stages nearby. The groups rested and got some shade in the temporary bamboo huts created in the fields during the harvest period. The lunch was had together at the fire break line, beside the resting hut which is built for people who came for watching and control the fire during summer time. They are mostly young men and they use the hut to rest in the night time, because they need to stay along and watch the fire break the whole day and night during summer time, to protect the forest and crops

General reflections on key messages on risks and responses (Box 7)

Initially there was some discussions about the wording on the posters, in particular the one translated into Thai, and explanations were needed. For example, there was confusion about what risk and responses meant. One group was confused with the use of the terms including "diverse farming systems" which was interpreted as different types of farming systems – potentially supporting mono-cultural crop farming such as corn – while instead it meant to emphasise farming systems with high crop and farm diversity, such as what was experienced in Hin Lad Nai. An outcome of these discussions was the recognition of the importance of getting the translation and interpretation within the messages right.

It was recognised that the messages embraced a holistic approach. Participants pointed out that bees are not the only pollinators. Bats, butterflies and many related processes and interactions contribute to pollination. Deer eat the fruit and aid in dispersal and germination, and then they help in the production of flowers, which feed the bees, who pollinate the rice and produce honey – this is a cycle, an integrated system and the pollinators cannot be considered in isolation from the rest of the system. This view is necessary to form a more integrated picture of landscape health. One of the Indigenous participants commented that although Indigenous peoples use seasonal indicators to trigger actions, there are also cultural indicators, that were not necessarily seasonal, that are also an important part of ILK systems.

It was noted that another key message (#23), "Many actions to support wild and managed pollinators and pollination could be implemented more effectively with improved governance," would have covered some of the discussions that came up.

A Karen saying was shared – "you put the gold at the back of the Buddha" (where no one can see it). It means that you do something good, but not seeking to get recognition for it. Bees are the same – they do a very important job without thanks. An important risk is that people are not aware of their critical role of bees, there is room for more education. Furthermore, one participant stated that if one just seeks to address resource issues unlinked to culture, then that in itself is a risk.

Several groups found the key messages supportive, but reflected that the big challenge is to get them implemented on the ground. For example, it was considered that food sovereignty is key, and the importance of tenure, which had been brought up many times in the discussions.

Some potential gaps were identified in relation to risks and responses. First, the risks associated with mono-cropping was not highlighted enough, at least not in the posters. Secondly, a focus on maintaining the knowledge was called for – ILKS and languages are under risk, is this stressed enough in the key messages? Finally, the latter comment was connected to a broader reflection – what comes first? Communities or resources? – referring to that the threats to ecosystems and pollinators were recognised, but not the threats to communities and their livelihoods.

Reflections based on practices and experiences in Hin Lad Nai and other local places

Local participants agreed that the messages cover most of the cultural and other important dimensions to the reality in Hin Lad Nai. For example the first message of adapting conservation and practices is a good message for the people there. It was stated that the traditional system has already increased biodiversity and continues to manage it, but now we need recognition from the government on the benefits of this system. In general, the risks in Hin Lad Nai, are mostly linked to environmental causes, such as cold temperatures, rather than with human practices. Concerning diversification of practice, a Myanmar participant commented that they have done much agricultural diversification, "our fallows have for instance become smaller and the fallow period is longer, but when discussing with the government we are told that our practices use more forest, even though this is not true and the forest area is actually increasing". Governments see rotational farming as a destructive practice, but they often look at the lowlands only where there is not only rotational farming but also a mix with other practices, which can be destructive. From Kenya, it was shared that the community have rights and strong relations to land, but there are laws preventing their cultural practices and restricts their use. They would like to get their customary laws recognised along with their traditional territories, and be outside the land laws. A similar situation was shared from New Zealand, with hunting rights as an example.

One of the local expert guides shared that one risk that they have learnt about in Hin Lad Nai was the use of hormones. They heard about hormones as being beneficial for bees, and so they were put them on trees where the bees were but the bees did not like that and relocated. They never used hormones again. He stated that the key method for addressing change, risks and opportunities is observation. The villagers involved in bee keeping keep observing what certain practices lead to. Bees are their teachers. Observing them, they learn about them.



Resting for lunch in the shadow along a firebreak path, which the community uses to guard over and manage forest fires. Photo: J. Bumroongchai

A visiting Indigenous participant asked if they have dreams and visions to know when to harvest resources. It was explained that the shamans are the ones who interpret the dreams and visions. They get advice from the elders to make sure that the interpretation is correct. This helps in deciding when to harvest the honey. One of the guides declared that he would continue being a beekeeper because it is the right livelihood. Another guide reflected that they are happiness-oriented: “we do things for our happy minds, not for commercial purposes or marketing”.

One participant shared how the concept and practice of the Mayan forest, with the milpa systems and “home gardens”, have similarities with Hin Lad Nai. They are also very rich biodiversity. They function as important seed banks. The “home gardens” are similar to agro-forestry in how they are adding value by processing natural products, and that people do it for their own happiness and wellbeing. The forests that we now see in Guatemala have been modelled and shaped by the Mayans, in the same way that has occurred here in Hin Lad Nai. It was explained that in the past the Mayans used to write all their knowledge in books called “Códices”.

Nowadays, the Mayans do not transmit their knowledge through written records, but rather by oral transmission from generation to generation. The local participants pointed out that they also transmit their knowledge orally, through hta, i.e. poems, songs and proverbs.

The management of domesticated bees in Sweden was explained by a participant. It became clear that it is quite a different system compared to Hin Lad Nai. An example is that bees need to be fed sugar during the winter as there is no natural food available for them during that very cold period, as the beekeeper harvest all their honey that the bees are producing from flowers and trees. There is no need for that in Hin Lad Nai, but in Thailand some beekeepers feed bees with sugar anyhow. It was remarked that the honey produced from feeding on sugar would be considered fake here in Hin Lad Nai. Some Chinese people came to the village to buy honey and they had a method to know if the bees fed on flowers or on sugar. If they fed on sugar, they paid less. The natural honey obtained from the forest (the organic one) is much more expensive. Before they got 20 WHT/bag, nowadays they pay them at 80-100 WHT/bag. He also said that with the increased interest from outsiders, now there are more beehives in the community. If the outsiders were not interested, they would be doing it as they did it in the past, in the traditional way.

Challenges to get rotational farming understood and appreciated

A key issue in terms of risks and policies was that, despite the fact that rotational farming provides positive contributions to pollinators, pollination and food production. The government

and general society have misguided stereotyped views and opinions on rotational farming. Whenever there is haze and smog in the city of Chiang Mai, Indigenous peoples on the hills are blamed for causing it. In Hin Lad Nai they still do the burning because they are a very strong community and have gained a reputation for good living in the forest, but in many other places the burning leads to conflicts between communities and government. Much research supports shifting cultivation, but the government does not want to support it. Villagers in Hin Lad Nai are very strong at communicating the value of their livelihoods.

One of the visiting participants asked about the Special Cultural Zone which was a recognition from the government. It was explained that this has led to some progress – for example burning is not allowed generally, but in the Special Zones it is allowed for rotational farming. However, there is a disconnect between different Ministries and their policies. The Ministry of Culture of Thailand is supportive of multicultural societies and cultural pluralism, but the Ministries of the Environment and the Ministry of Agriculture still do not recognise the Special Cultural Zone, and the value of the knowledge and practices for the Karen people for biodiversity conservation. One guide explained that forestry officials regularly visit the village and that they want to declare this area as a National Park. He said that while Free, Prior and Informed Consent is important to them as Indigenous people, the government does not always work like this. It was highlighted that Hin Lad Nai community does not have land rights or titles, their land belongs to the government. They are allowed to cultivate, but they do not have land tenure. It was suggested that one of the key messages for the seminar at Chiang Mai University should be on the importance of securing that the Hin Lad Nai and other Karen communities can stay where they are and continue their practices, including through the rights to their traditional land, the right to be happy and by strengthening local and traditional governance.

In Myanmar they face the same problems regarding land rights and Indigenous peoples' participation in decision-making. Ministries do not talk to each other and do not coordinate, and there are several conflicts between policy jurisdictions. Another participant shared that the Naga people in northeast India, have achieved autonomy, but other Indigenous peoples in India do not have the same confidence about their rights.

Youth and culturally adapted education key for the future

One local participant reflected that young people have much more diverse livelihood system, and the cultivation in the fallow system is not their only source of income. The produce from the rotational farming is mainly for self-sufficiency in food. Beekeeping, coffee and tea harvesting and selling, and rice paddy cultivation are other common activities. If there

was enough rice before, it may not be enough now, and we need to have a buffer for our livelihoods, especially as the world is changing very fast. We also need to manage our water, which is more unstable now; we need it for humans, but also animals as well as bees. It is important to strengthen traditional governance, but new traditions may also be created for young people. A visitor said that it is very positive to see that Hin Lad Nai is thinking about how to manage the future and how to continue have a good life and livelihoods in the future. One of the local elders reflected that if the youth learn our traditional way of living they will be able to survive well here regardless of their education. Higher education takes children away from our people, our place, and hinders the survival of the community in the long run. If not forced to study more, it would be difficult to find a job in the city for young people. Although there are exceptions, like a young girl which is now studying to become a medical doctor in Japan. One of the young local women commented that the youth grows up here in the community, and the knowledge and practices are learned from elders. This includes the meaning and advantages of the rotational farming system for nature and people. This is something that should be practiced more and continued. The role of Indigenous schools and intercultural education on articulating diverse knowledge systems and perpetuating ILK was highlighted by several of the visiting indigenous participants.

Summary of discussion on status and trends of pollinators

Key message from the Pollination Assessment to be discussed was that, wild pollinators have declined in occurrence and diversity (and abundance for certain species) at local and regional scales in North West Europe and North America. Although a lack of wild pollinator data (species identity, distribution and abundance) for Latin America, Africa, Asia and Oceania preclude any general statement on their regional status, local declines have been recorded.

General reflections on key message regarding status and trends

The trends observed by the Indigenous communities, in Hin Lad Nai as well as knowledge holders and ILK experts from other parts of the world, were largely consistent with the trends identified in the Assessment report. What is showed was that there was a decline in wild pollinators, and an increase in managed pollinators. However, the range of pollinator species being managed in Hin Lad Nai is more diverse than the statement on managed pollinators in the Assessment report reflects. The bee keeping practices in Hin Lad Nai have supported an increase in the number of the three managed bee species; honeybees, royal bees and stingless bees. It is worth considering the diversity in bee keeping practices, and the ways this might support a more diverse range of bee species.



Discussing Key messages on the status and trends for pollinators. Photo: P. Malmer

Experiences of status and trends of pollinators in Hin Lad Nai, and other participating communities

The participants shared what the status and trends of pollinators in their communities. From Hin Lad Nai it was reported in one group that populations of butterflies were stable and the royal bee populations had fluctuated in recent years. The populations of all of the bees in managed hives had increased in number. Some small bird populations are missing – ever since the sharp drop in temperatures one year when many birds died and the population has not recovered.

In another group, the local pollination experts among participants agreed that generally bee species that come to the beehives are increasing. The number of bees is linked to weather conditions, if it is too dry the bees decrease, and they die off with cold temperatures. One species which was small and stays in dry woodlands died off in the past, due to the cold weather. Hail also kills bees. In Hin Lad Nai they have had bee boxes starting ten years ago. They started placing them in the fallows about three years ago. Another of the local guides and pollinator expert said that honey bees and stingless bees have remained the same – it has only increased in bee boxes because the bees move there from other places. It was further shared that many bird species have declined, though, even if those staying in the forest were

less affected as they are more protected. Bats, including fruit bats, are present in the community's forest.

From other Karen communities in Chiang Rai it was reported that the populations of native bees in the community have decreased, referring to bees that are kept wild and forms natural hives. In another community they experience that bat numbers are decreasing. They also witnessed a sharp drop in royal bee numbers one year, and they believed it was due to forest fires that year. The populations came back the following years. A participant from another part of northern Thailand added that their territory is also rich in royal bees and bee populations are in general increasing and not decreasing. He explained that the honey is harvested with a rapid turnover, thus more bees are coming to our areas. In another community, butterfly and bird populations were said to be stable, but that wild bee populations were declining.

From Te Urewera, New Zealand it was reported the populations of managed bees were increasing, but there had been a decline in all wild pollinator species: bees, birds and bats. The decline of native bird species is also impacting the health of the forest, as these birds play an important role in seed dispersal, so the community is conducting monitoring of bird populations in their territory. It was declared that there



Different species of bees prefer specific habitats within the rich forest ecosystem. Photo: J. Bumroongchai

is data available from the communities who are monitoring a number of species but this data was not asked for or included in the Pollination Assessments.

In the Naga territory in Northeast India, some rock bees and other species were experienced to be in decline. In Nepal, wild pollinators are declining and this is in part attributed to the fact that there has been a decrease in the amount of mustard being grown, as cheaper edible oils have become available through the global market.

In Myanmar, the participants described that in their community they used to have lots of birds and bats, but many have left and those numbers have decreased in recent years. The environment is changing and the numbers of pollinators are declining. Even if they may not see locally that they are declining, the participants from Myanmar agree that there is an overall decline. Habitat for bees are also declining also and it was explained that bees like certain trees are not so common anymore. Their habitat is declining.

From Kenya, the story is that bees are in decline, or at least it is clear that the honey production from wild bees is lower than before. The perception is that community building bees are decreasing. The reason is that there is less land with forest, so not enough habitat for the bees.

Drivers

Pesticide use was identified as being a cause of pollinator decline, and it was felt that there should be stronger monitoring of pesticide use, and the impact this has on pollinators, and ecosystems more broadly. Several argued that to protect the bees, there is a need to avoid using chemicals. In one group it was stated, “we can observe those increasing trends in pollinators in Hin Lad Nai and other similar villages, but actually many villages in Northern Thailand are planting monocrops such as maize, and they do not have so many pollinators”.

It was discussed that it would be interesting to collect data from several rotational farming villages to be able to show evidence that these practices promote pollinators, and this could then be compared with other villages which have intensive cash crop agriculture. It was argued that villages which transitioned to cash crops saw a drop in pollinators. Mainstream policy directions and trends tend to promote monocultures of cash crops. This may further push pollinators to decline. It was reflected that policies should instead support people which have knowledge of the forest and who preserve pollination processes– which is supported by the key messages in the pollination assessment.

Another group discussed the changes in bee population over time. A Hin Lad Nai elder explained that he started being a farmer when he was eight, and then saw lots of honeybees coming to look for food in the forest. When he was eleven to twelve years old he saw bees moving mostly to the west, but not getting back, they went in the direction of the big mountain. That place has big cliffs, and bees could still be there nowadays, but that place is not accessible by people. After the logging concession in Hin Lad Nai in the 90's, many bees never came back. He said, "we also had a bird which we used to see here, but it is no longer visible, it disappeared 32 years ago since the logging concession". Several Karen participants reflected that bees are migrating. In another place, they experience that bees move through their area towards big cliffs with many bees. It was also stated that insects migrate due to different environmental conditions.

Monitoring

The groups discussed different aspects of and innovations for monitoring. In one group, they thought it would be possible for monitoring to be built into beekeeping practices – many farmers in Hin Lad Nai already monitor the number of occupied hives each year. It might be possible to feed such data into assessments, however there was a question about the control and ownership of such data. Another opportunity could be to monitor certain tree species that are experienced to be linked with bees, such as Java Plum (*Syzygium cumini*).

One of the local experts suggested that one thing would be to monitor the bees, but it was also important to monitor the use and impact of pesticides to better understand the risks for pollinators. The community members also discussed a number of things they were curious to investigate further, for example to test bee boxes in different parts of the rotational farming system. There was some observation that more honey was produced by hives placed in the fallow area due to the diversity and number of flowers and other plants. It would be interesting to place boxes where there was a high concentration of certain species (like bitter bush) and to evaluate if the medicinal properties of the plant could be transferred by the bees to the honey. The community was also interested in finding out more about the nutrition of certain species that the bees feed and if that influences the nutritional content of the honey they produce.

Several groups discussed the opportunities to use mobile phones to monitor the bees and it was found that youth are keen to do these things. There is a need to organise different forms of exchange of knowledge. Many participants felt that people should be involved in monitoring and that technology could be used for this. Myanmar participants reflected on the need to monitor deforestation and the importance to create centres and regions of training for this – there is a need for demonstration places and networking. It was felt that with

more data this could support more objective decision-making, and that scientists should support this.

Reflections on assessments of confidence and different knowledge systems

Some of the key messages discussed had assessments of confidence assigned to them, such as "well established", or "established but incomplete". In each group, the meaning of this confidence assignment in the IPBES assessment was explained using a poster. It was discussed, to a varying degree in the different groups about what these confidence messages based on a scientific approach meant, and how confidence is assessed in ILKS. Some of the groups found this discussion difficult.

It was explained that confidence is the scientific way to express how "true" a message is. "Established by incomplete", means that the amount of evidence is not enough, or that there is support from certain areas but not known for others. One example is that pollinators are found to decline in many areas, but there is (scientific) information missing from many parts of the world.

What is considered evidence and knowledge with confidence matters for the decision-making and policies. It was argued that policymakers do not believe that communities can collect data. But the evidence cannot be denied, so if communities compile the information and write it up, it cannot be denied that those methods they are using work. Furthermore, it was suggested that it may also suit the policymakers and their interests to say that certain messages are incomplete. One Indigenous participant said that the data is there, but it is not used by scientists, and she does not know what are the obstacles.

An Hin Lad Nai elder gave a Karen proverb that says that "the earth is crying place" so we need to keep on presenting our evidence". For those messages to become complete, the people who should have the rights to manage resources need to be supported by the government. Such recognition should be established in order for knowledge confidence to be completed and only communities can provide the evidence to show that this works. There is concern that what are actually best practices and implemented locally are based on experiences and are under attack and not supported. Solutions which work - such as rotational farming in Hin Lad Nai - should be supported in policy, and the strengths in diversity of local solutions based on experiences should be recognised from local to international levels. Communities often get pressured by generalised policies, e.g. through the promotion of monoculture and cash crops and protected areas, managed so people are not allowed to stay on their traditional territories any more. For instance, a community not far from here is now in a crisis moment, as they are pressured by the expansion of a national park, and they do not know if they will be able to continue with their livelihood based on rotational farming or not.



Holders of knowledge and experts on pollinators and pollination from diverse knowledge systems. Simone Athayde, Brazil/US; Edgar Pérez, Guatemala; Hpa tij Poonoo Papa, Thailand; Julio López Maldonado, Guatemala; Jorri Odochao, Thailand; John Lengois, Kenya; Elmer González, Panama and Atamira Tumarae, New Zealand. Photo: J. Bumroongchai

One participant talked about the Local Biodiversity Outlooks²³ and that they are now looking for case studies. To include the Karen rotational farming case could help to advocate for it as it will be carefully explained for the world, and end up in the hands of the governments.

As one way to talk about confidence in ILKS, one group discussed how do you know that your knowledge is true or that it works? It was pointed out by several Indigenous participants in the group that knowledge has been transferred from generation to generation and that observations through many years is critical. There was also agreement that certain people have recognition by the community as a knowledgeable person, an authority, in the specific knowledge domain. When discussing the knowledge in Hin Lad Nai several examples from medicine were used as illustration – the knowledge about a treatment is proven by experience, and proof that it works is accumulated over time. The participants reflected about observations made over many years, and also the role of testimonies given by others. It was also noted about healers that they get revelations from the spiritual world – which gives inspiration for their practice. Further, people are different in terms of how the body reacts to medicine and the Karen healers ask the spirits for medicine for specific persons and it is about a close relationship between the healer and the ill person. It was agreed that certain people have legitimacy and their knowledge have confidence. For example, if a healer is successful, he or she gets a reputation.

One of the local experts reflected upon knowledge of bee keeping and that it is actually relatively new in Hin Lad Nai.

He explained: “bee keeping was not taken up lightly in Hin Lad Nai. The community had a lot of internal meetings to assess the pro and cons. One of the key principles that was agreed upon and that guided the increase in bee keeping was that people should not take too much from nature, not to be greedy. A Japanese researcher introduced the idea of bee keeping and provided some seed funding. The Japanese system didn’t work well here as bees from outside steal food from the local bees, so we adapted it and based it on natural processes and local bees in the Hin Lad Nai environment”. He pointed out that before the Japanese came, he already had knowledge about bees. It is the practices that have changed.

Summary of plenary discussions reporting back from walking workshop

Back in the community after the day in the rotational farming system, all the groups reported back to one another and discussions followed. Generally, they expressed their appreciation of what they had learnt during the walk, and the value in reciprocal sharing of knowledge and experiences. The discussion brought up much of what has been summarised in the sections above, but also some additional thoughts.

The group observed that in Hin Lad Nai there appears to be a mismatch between global trends of decline and the increasing bee populations in the community. However, there have been major incidents where pollinators have declined, but recovered again.

Many of the responses to threats suggested in the key messages discussed during the day were relevant for Hin Lad Nai and are being practiced and implemented here.

23. <https://beta.localbiodiversityoutlooks.net>

Innovations is an important part and should be considered and more visible in the key messages. The learning across generations were also stressed in this respect. “Young people need the guidance of the elders, in order to meet the needs of the future and adapt to changes. Young people think about the future”, said one participant.

It was stressed that important practices and ways of living that support pollinators are not just insufficiently recognised – they are often under attack. “If you manage your forest well, the bees will come to your forest. As such, protection of pollinators should recognise IPLCs”. It was also noted that, “The spiritual side of things is largely missing in the assessment SPM”.

Along the same line, it was important to recognise the need to maintain ILK, and that the loss of ILK is as much a loss as the species the knowledge are connected to. “What comes first? People or resources? It’s not only pollinations that are in decline, traditional practices are also in decline – and with them the associated knowledge. People’s habitats are in decline, so people cannot apply their traditional practices”.

In the group discussions it had been felt that the confidence messages were not easy to deal with. However, it was also apparent that the way you perceive confidence, and what information you bring in when you establish the confidence messages, are critical. It was stressed that “the reason why the findings are established but incomplete is because our stories have not yet been heard or fully captured. Our data has not been fully included. This highlights the need to document and share our knowledge about pollinators”. One participant asked “What is truth?” He further commented that science sometimes changes in paradigms and that this also happens in ILK. Knowledge is changing over time; actually, all knowledge systems do change over time.

Monitoring was further recognised as very important – but not only about pollinators, also monitoring of other indicators, such as the use of chemicals. Citizen science offers some apps and tools that could be useful to monitor bees

and map them easily. It was noted that much data that was included in the assessment was not produced by scientists, but rather by naturalists and amateurs (e.g. bird watchers and beekeepers) – but in the experience of the participants there still seems to remain a gap with ILK.

The key messages in the Pollination Assessment were generally perceived as too soft, and getting them implemented in policies would be a challenge. It was commented with concern that the IPBES process is flawed, and that the intergovernmental approach, where the government can reformulate the evidence articulated and suggested by science and ILK holders, leads to soft statements and little commitment. “How can we ask the Karen to monitor and provide feedback if the impact is not strong? What is the pathway to impact? The uptake of knowledge needs strong statements”.

Last but not least, it was suggested that “IPBES should have an internal reflection on its own priorities, and how it does link with local realities and needs. A proper and clear outreach strategy is needed to bring messages at the national level”.

Cultural evening

The cultural evening, where all community members of Hin Lad Nai were also invited, started with a honey-tasting session with honey brought from Sweden, Estonia and Australia, together with different kinds of honey from Hin Lad Nai: from the honey bee, the stingless bees, and the royal bee. There were also honey with herbs. This honey-tasting session allowed the international guests and their local hosts to experience the values of pollination in a different way. After the honey-tasting, a number of cultural performances by all the workshop participants, including traditional sable dances by the Karen people accompanied by traditional music. All participants were invited on stage to share poems, songs and dances, ranging from Italian songs from the resistance to New Zealand poi dancing and a haka, in a very cheerful and intercultural atmosphere.

Day 4. Ways forward for pollinators, pollination and the people and landscapes nurturing them

In the morning, participants worked around a new set of posters on pathways identified by the Pollination Assessment, drawing on the last days' observations in the field and interactions across knowledge systems during the walks. Additional presentations contributed an oversight of the international landscape of bodies that would underpin a knowledge-policy interface in support of ILKP and biocultural conservation approaches. What can be done to encourage the uptake of the Pollination Assessment in local, national and international policy? How can such uptake link Karen knowledges to the science-policy interface, as part of an effort to strengthen the recognition of their customary practices, that contributes to conservation and sustainable use of biodiversity, and to the livelihood of the Karen people? These questions, that also were part of the objectives of the Dialogue, were at the heart of the deliberations this morning.

Session 1: Discussions on uptake and ways forward

For this session, Ro Hill and Lynn Dicks gathered the group around six posters, three in English and three in Thai, that presented the three main sets of pathways towards solutions identified in the Pollination Assessment (see Box 8), while also recalling that there are already many locally-identified pathways in place such as the ones that we have experienced in Hin Lad Nai.

They presented the main strategic responses to risks and opportunities associated with pollinators, emphasising those that are more relevant to IPLCs. They also underlined the importance of supporting biocultural conservation approaches through the recognition of tenure rights and strengthening of ILK and traditional governance. It was highlighted that bridging across people's diverse knowledge systems is critical for transforming society's relationship with nature. Collaborative pathways were emphasised as a strategic way forward.

In the discussion that followed around the posters, participants commented that there is a big gap between putting forward strategies and their implementation. This is the crux of the issue. Educating the managers of large

Box 8. Key messages from SPM summarising Strategic responses to risks and opportunities associated with pollinators and pollination:

Improving current conditions for pollinators and for maintaining pollination

- Manage Immediate Risks
- Utilise Immediate Opportunities

Transforming Agricultural Landscapes

- Ecologically intensify agriculture through active management of ecosystem services
- Strengthen existing diversified farming systems
- Support diversified farming systems; organic agriculture; and food security, including the ability to determine one's own agricultural and food policies, resilience and ecological intensification
- Support "biocultural diversity" and conservation approaches through recognition of rights, tenure and strengthening of indigenous and local knowledge and traditional governance that supports pollinators

Invest in ecological infrastructure

Transforming Society's Relationship with Nature

- Integrate people's diverse knowledge
- Link people and pollinators through collaborative, cross sectoral approaches

intensive agricultural systems about the benefits and critical role of pollinators is key. A way forward for supporting communities to engage with the material is to package the recommendations of relevance for them, and also support ways for them to connect with their situation and develop their own policies guided by the IPBES recommendations.

An Indigenous participant reminded that we need to tell our governments that, “pesticides are poisoning our lands. This risks depleting our plants and animals. And if we lose our plants and animals, we will also lose our knowledge. If we lose a medicinal plant, we also lose our knowledge about this plant. By so doing, we are eroding our identity. I might look Indigenous, but if I lose my identity, I am not. In this regard, it is important to recognise our songs, our dances and our stories within which our knowledge is embedded. These practices connect the knowledges to the local ecosystem. This is important in understanding how we strengthen these integrated systems and build education. The governments and companies will not like this push to reduce pesticide use, but we will be strong enough to resist”.

It was stated that securing territory and protecting ILKS are two inter-related discourses but that are not always connected. It was important that both of these are addressed when talking with governments about protecting biodiversity and ecosystems – e.g. when the value of ILK is brought forward it is critical to also talk about the rights of IPLCs.

Regarding bridging different kinds of knowledge, another participant added that there are different ways of knowing, and the knowledge system is important and the governance system is important – but we also need to connect with the love of the land, reciprocity, and nurturing the relations between people and nature. The kind of relationship that we need to build with the ecosystem is one based on kindness, love, care, respect and responsibility. This is the kind of transformation of society’s relationship with nature that we need and this should be the anchor of our discussions.

The importance of fostering positive thinking was brought up. We are constantly bombarded with depressing environmental news, and that make us sometimes focus too much on the gloom and doom. This has the potential risk of rendering society hopeless and disengaged. So perhaps we need to focus more on solution-based, positive approaches. Thus, it was inspiring to see that the IPBES Pollination Assessment has identified so many solutions and tools and positive things that can be done to improve the status of pollinators. These should be taken as reason for optimism, we need a narrative of hope and we need to all believe that we are change makers, and that transformative change lies in our hands.

Along the same line, it was added that we talk about scaling up, e.g. making changes that matter at higher levels, and about scaling out which is about networking and spreading initiatives – the Special Cultural Zones are a good example of scaling out. However, it is increasingly

emphasised that for change to happen there is also needed to scale deep. To connect change with underlying values, connect with peoples deeper motivations and to secure the foundation for resilient societies.

Indigenous participants reflected that examples like the one in Hin Lad Nai help us to be resilient. It is difficult to value what is not known. So, let’s try to make visible our knowledge! It would be good to keep in contact after the end of this dialogue so that we can support each other in the face of government disempowerment.

Pathways of the Hin Lad Nai community

Prasert Trakansuphakon explained that the people from Hin Lad Nai have a very strong process for engaging with the forest, such as the rotational farming and strengthen their customary collective management of the forest, but their livelihood is still at risk with their forest nominated for conversion to a National Park. How can we support the Karen people in protecting and defending their forest? Karen have no rights through the legal framework and this is still the case even if they have good practice.

One example brought forward of how the positive message about the Karen livelihoods was communicated through the story of their honey, through the taste of honey – its single origin. By communicating the story of Hin Lad Nai to outsiders – this makes the people very proud. The conversation turned to the local pathways that have been identified in Hin Lad Nai, such as the demarcation of the Special Cultural Zone. What the group have witnessed here would be a good inspiration to think about mechanisms to connect global narratives to local realities. The Karen hta typically supported this journey throughout the conversation.

Chief Hpa tee²⁴ Poo Noo, a traditional leader, initiated the conversation by saying he hoped they are helping to create a better world. He specifically shared hta that says, “Live with the water, care for the river, live with trees, care for the forest” Another hta referred to was, “If we look back to ancient time, when the human got pregnant from the leg of the calf, every human are brothers and sisters”. He continued, “All human beings are brothers and sisters, and we have each our own traditional practices, we shouldn’t forget, these are the rooted knowledge; the roots of your people, and the foundation of your practice. You can bring in other knowledge, but still, your traditional knowledge is your root. You should not undermine or forget your traditional knowledge as you go into the future. All people of the world are brothers and sisters and we need to look together for solutions to the problems of our world. The Karen people of Hin Lad Nai are looking for the support of this group – a powerful collective of people”.

Nivet Siri, another Karen leader, referred to another hta, “we are good brothers and sisters and when we go to the

24. *Hpa tee* means Uncle



Pathways moving forward beyond the dialogue are discussed widely in the community hall. Photo: J. Bumroongchai

rotational field we go together, we are weeding together until the sunset, brothers and sisters take each other's hands and go back home". This means that we have a strong relationship as brothers and sisters and help each other in our community. He continues, "If you have a strong spiritual connection with your land, it will assist your farming. These close relationships are integral to the sustainable farming approach. Because of the ecology and resources of the land and the forest the people have been carefully managing here, they are rich. As a result, the government has made a survey of our lands, to potentially create a National Park. As a result, now the people are worried – not just for themselves but also for the animals – the cattle, the chickens, the bees. They too will be affected by such a designation".

Mr. Di Poo Noo, young leader from Papae village, added in that the Karen people are always wrongly blamed for destroying the forest. It was important to revive traditional rotational farming, and pointed out that the announcement of a "Wild life protection and no-hunting zone" declared by the government overlaps with the area where they practice their rotational farming. The Karen people depend on the forest. Although the National Park is still in preparation phase, people feel insecure. Animals like livestock and buffalos will also face problems, because of the strict regulations of a National Park. "The government doesn't understand our way of life. Just like you come here to learn our way of life, how can we get the officials to come and understand? We don't have the weight to discuss with the government." It was also explained that sacred sites are not recognised, because they say that there is no evidence. Hin Lad Nai is considered lucky by the other groups, but still,

people here don't have the evidence to prove a place is a sacred site – ILK is not recognised. What can be done so that guardians of the forest are secured?

The Karen leaders encouraged the group to explain to the world their way of life. "Our struggle is a big thing, not a small thing. It's a struggle every day. We need to protect our people we need to rise up and fight otherwise our people will be arrested and taken to court."

Participants from other Karen communities Mr. Nanthawat Thiengrongsakul from Mae Lan Kham added, that what they are doing in this community is good. They request that the government avoids the creation of new protected areas in this place, especially without considering the rights of the peoples living and having their traditional territories there. The forest management Hin Lad Nai has been recognised internationally, and their challenge is with the national government.

Then, youth were given the opportunity to speak. Two young women, Miss Niraporn Chapaw and Miss Sirinthip Sirijariya, explained that the government does not recognise Karen people because they do not understand our livelihood. But here we teach our children so that what the elderly people have done is not useless. In some small communities, children as young as three or four years old have to go down to the lowlands to attend school, as there is no local community school, like here, in Hin Lad Nai. These kids don't get to follow their parents into the field. They have to leave the community to further their education and when they come back they don't know what to do.

Nutandai Trakansupakhon explained that when he was in the school in town, he never mentioned that he was Karen,

as the Karen always got the blame for destroying the forest. It is important that the rights of children are respected and that knowledge from their own culture is recognised and taught in the schools. We'd like to establish schools where kids can learn the Karen knowledge and mainstream knowledge together – otherwise they won't take care of their own knowledge. We want them to be proud of themselves and who they are.

The session was closed with these heartfelt reflections from the community of Hin Lad Nai.

Session 2. Discussion on opportunities for international outreach and impact

Session 2 provided an overview of opportunities for outreach and impact through linking local action to international agencies work, and for learning how these can support in issues of leverage and responsibility. After that, the envisioning of pathways forward continued with a discussion of the main enabling factors, before the closure of the Dialogue.

Nigel Crawhall introduced UNESCO (United Nations Educational, Scientific and Cultural Organization). He explained that UNESCO is home to several international conventions, including the Convention on World Heritage from 1972, and the Convention for the Safeguarding of the Intangible Cultural Heritage, from 2003. The UNESCO Executive Board had recently noted with satisfaction a new policy on engaging with Indigenous peoples²⁵. That policy is in alignment with the UN Declaration on the Rights of Indigenous Peoples (UN DRIP). UNESCO is also hosting in 2019 the International Year of Indigenous Languages. The Section for Small Islands and Indigenous Knowledge, which Nigel Crawhall is heading, hosts the IPBES Technical Support Unit on ILK.

Ms Kamonrat Chayamarit, from the Bangkok office of UNESCO, provided a brief introduction on the work of the Bangkok Office of UNESCO. She explained that the office is supporting the implementation of the Convention of World Heritage in Thailand.

Madhav Karki spoke about IPBES in his capacity of the Co-Chair of the ILK Task Force as well as the MEP member and Co-Chair of the Asia-Pacific Regional Assessment. He explained that the main goal of IPBES is to enhance the interface between knowledge and policy. He pointed out that IPBES is a very young institution and that events such as this dialogue are part of a learning process for IPBES. The Hin Lad Nai community can teach us a lot about what “living in harmony with nature” means in practice, he said.

Madhav Karki also, in his role as Deputy Chair of the IUCN Commission on Ecosystem Management, explained briefly the goals of the Commissions of the IUCN, stating that Indigenous knowledge and culture should be integral of all biodiversity conservation and management practices.

Joji Cariño spoke about the Network of the Centres of Distinction on ILK, that corresponds to organisations of IPLCs who are committed to promote the recognition of ILK (see Day 1, session 5). CBD is now discussing its future strategic plan, the post-2020 global biodiversity framework, and it will also deal with how CBD will continue working with IPLCs, she said. We need to make the point and stress that the future is nature and culture together. A way for doing this is through the Local Biodiversity Outlooks²⁶, which highlight the contributions of IPLCs to achieving the goals of the CBD. They are now immersed in developing the Second Local Biodiversity Outlooks (LBO-2) that will be launched together with the Global Biodiversity Outlooks-5, complementing and eventually contradicting some of their main findings. The Centres of Distinction are also involved in IPBES through the International Indigenous Forum on Biodiversity and Ecosystem Services (IIF BES) which is the Caucus for IPLCs that is active during the IPBES global meetings. Finally, Joji Cariño pointed out that Dialogues such as the one here in Hin Lad Nai offers an opportunity to join efforts and make IPLCs contributions visible.

Martijn Thiessen presented the “Promote Pollinators” initiative (earlier Coalition on the Willing). He explained that when the IPBES Pollination Assessment was published, some countries formulated a Declaration to take action to reverse the decline in pollinators. The core element of the coalition is connecting the scientific arena with the work of governments, creating networks to take action. He pointed out that it is an informal network which is very easy for governments to join.

Abram Bicksler then explained the work of the Food and Agriculture Organization of the United Nations (FAO), whose main constituents are member governments and which acts as a neutral knowledge broker. FAO has many different mechanisms for integration and participation of civil society, including IPLCs. He mentioned that co-creation of knowledge, multiple evidences and cultural traditions are important elements of their work on agroecology, pollinators, and pollination by the Agroecology and Ecosystem Services team within FAO. One of their main lines of work is to examine and promote how food systems can be transformed to be more sustainable. He explained that FAO has been invited by the Convention on Biological Diversity to facilitate the Updated Plan of action 2018-2030 for the International Initiative on the Conservation and Sustainable Use of Pollinators (IPI 2), which is set to be in place until 2030. This Initiative aims to facilitate the implementation of the main findings of the IPBES Pollination Assessment, through enabling policies, field-level implementation, promoting civil society engagement and capacity-building opportunities for the conservation and sustainable use of pollinators. He also stressed that FAO is country-driven, in the sense that they respond to the needs of countries.

25. <https://en.unesco.org/indigenous-peoples/policy>

26. <https://beta.localbiodiversityoutlooks.net>



Beehives are carefully placed and looked after by the community for a good honey harvest. Photo: D. Crimella

Diversity of pathways at local level

After the orientation of some supportive overarching global frameworks, the discussion continued on pathways and strategies to implement, starting from the local level, and the main enabling factors for the uptake of these strategies.

To capitalise on sharing as a way to scale up our experiences, and to establish better connections to fill information gaps between our communities was important. The challenges are how to convert the agreed decisions of the CBD, and the policy relevant key messages coming out from the IPBES Assessments, to applicable knowledges that can be applied on the ground? We need to strengthen local communities at the most local level, and then scale out to create a critical movement of actions on the ground to then influence government policy and decision-making.

Regarding Indigenous peoples' tenure rights, a number of experiences from all over the world were shared. One example was recent changes in Protection of Biodiversity and protected Area by law in Myanmar where it tends to recognise Community Protected Areas. On the other hand, Myanmar government set a high target for designation of protected areas, including many Indigenous areas and plan to

exclude the settlement of Indigenous peoples as a response to combating climate change under UNFCCC. This has resulted in pressure on Indigenous community conserved areas. There is a key role for Indigenous peoples to play in promoting ILK and their attachment to these places. In Panama, there are positive experiences of co-managed natural areas where nature and culture are integrated. In Guna Yala territory there is a Protected Area managed by the Guna people. The Panama government has recognised that this Protected Area is very well-managed. An advice from this experience was that it is important to get to know the institutions of our countries and the people that work at these institutions, so that we can connect with them. Strengthening models of community-based conservation areas was identified as one pathway, where the Special Cultural Zone of the Karen people is one source of inspiration.

In the Amazon, especially in countries where the political situation for Indigenous peoples has become worse, such as Brazil and Colombia, it was important to foster and enhance strategic partnerships across Indigenous organisations, private sector, civil society, government, academy, including international agencies – towards recognition of rights, social-



Closing ceremony. Photo: J. Bumroongchai

environmental and economic benefits of human-nature approaches and ILK. To draft communication strategies to engage broader society on these issues would be useful. Strengthen rights of nature according to Indigenous philosophies – i.e. nature as subjects, not objects, was another way mentioned. Additionally to strengthen Indigenous politicians and promote adoption of Indigenous philosophies, such as “Buen Vivir” to contrapose capitalist harmful and individualistic approaches.

One participant told us that when he reached out to the IPBES Focal Point of his country he learned that the IPBES Pollination Assessment was being actively used to combat perverse policies promoting pesticide use. This statement was used as an encouragement to all participants to make use of

the information of the IPBES Pollination Assessment, all content in there are free to use. You can bring it to communities, or you can refer to it as evidence when you are arguing with local, regional or national governments.

One of the good things about this Dialogue, it was reflected, is that we get to know that there are solutions to the daunting challenges ahead. When we came, we were aware of the need for transformation of the relationship with nature in society at large, but now we are convinced that these relationships can be changed, and that there are many tools and options that can help us to change it. Indigenous lands are often islands of hope in an ocean of despair, and that it is important to tend bridges between these islands. It is important to weave a narrative of hope, to inspire other

people to take action in their communities. Another participant added, that if we don't take care of the local, small things each of us, this will create global issues and challenges.

An Indigenous representative said that the land is calling us to fill our roles as guardians. She stated that we have the responsibility to ignite the fire to act. We need awareness and an awakening of what is happening in the World – build awareness and stoke the fire amongst your own Indigenous people- this is really important at the local level. If all the children of the world are learning these messages, then the leaders of tomorrow will be ready and placed to make good decisions.

Participants also pointed out the importance of raising awareness of bees and to link to ancient understandings of bees, and the general need for more community education about the importance of insects as pollinators, not just as crop eaters; this relates for example to the identified need to reduce the use of pesticides and promote diversified and organic farming systems. Some participants also said that, governments should support education with curriculum embracing traditional knowledges and practices and intergenerational learning in schools for Indigenous children.

A Karen leader said that he would like the government to support formal education, but also recognise the importance of intergenerational learning and ILK transmission outside the formal curriculum. It should not be wrong or illegal to learn from nature, "I did not have a formal education, I didn't go to school, I learnt from nature".

Other aspects that were mentioned include reaching out, sharing information, establishing partnerships for funding, networking, sharing information with a strong sense of responsibility, change the image of Indigenous Peoples, and embracing agroecology not only as a system of knowledge and practices, but also as a social movement. The knowledge of women was also highlighted, as well as the importance of the young generations. How and when can we engage with women's knowledges? How do we help the government to create the commitment to deliver on the international agreements, create a mechanism to support women and youth?

Joji Cariño summarised the many heartfelt recommendations around pathways and strategies that were shared in the session. She mentioned that the major pathways identified underpinned the importance of linking local, national and global decisions in a clear way. It was shared that national implementation is perhaps the "bottleneck" to connect local pathways and global discourses, and this challenge should probably be better highlighted in strategies. Joji Cariño also said that transformation usually comes from the local level, and it is also local transformation that can lead to higher level change. What can each participant do at the local level with their communities?

She then suggested three arenas where transformation is needed, i.e. concerning:

1. the relationships between biodiversity conservation initiatives and communities
2. the sustainability of our food systems
3. co-production of knowledge and the perception of diverse knowledge systems

Many participants shared suggestions that biodiversity conservation should be transformed to respect and better promote Indigenous cultures, and rather take advantages of synergies than exclude or restrict Indigenous people's access to conserved areas. Stories highlighted by the Karen leaders as well as by the guests among Indigenous peoples from other countries, witnessed that there is still a strong top-down thinking in conservation practice. IPBES was highlighted as an important catalyser of knowledge about what can be done to change or reinforce human and nature relationships. There were also thoughts shared that science has not yet fully recognised the contributions of Indigenous Knowledge to a sustainable future for the world. It is important to understand who are our allies and that a main transformation needed is the push for a stronger movement building.

Joji Cariño also highlighted that respect for elders, women and youth are important components of transformative change. She concluded by connecting with the philosophical thinking of the Karen people in that we are all brothers and sisters, that we are all born from the same ancestry, so we need to hold our hands and work together for a better future.

Closing ceremony

For the closing ceremony, similar as for the welcoming ceremony, the group gathered with the Hin Lad Nai shaman and elders that prayed and blessed all participants spirits so that everyone would travel safe home.

Organisers' conclusions

The Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production aimed at implementing a Multiple Evidence Base (MEB) approach (Figure 1), with an enriched picture of insights and knowledges, that can embrace both convergence and divergence in views towards more in-depth understandings. It did not have the intention of unifying all voices and thoughts into a common message. This summary of our learning is compiled by the coordinating team from SwedBio at SRC, IMPECT PASD, UNESCO, and CSIRO. It does not necessarily represent the opinions of all the participants, but can be seen as a basis for continued conversations and advances on weaving knowledge systems in IPBES and beyond.

First objective: Revisiting key messages from the IPBES Pollination Assessment; provide responses, identify gaps that remain, and examine knowledge-policy interface opportunities related to ILK on pollinators and pollination.

It was an exceptional experience to be in Hin Lad Nai to reflect on key messages of the IPBES Pollination Assessment with ILK holders, ILK experts, and other experts working on pollination and at the interface between diverse knowledge systems. We were privileged to have such an international reflection on this important document in situ in a thriving, biodiverse forest conserved according to the values and principles of Indigenous peoples, the Karen community of Hin Lad Nai, Chiang Rai Province, Thailand.

We found during the discussions that many of the considerations of critical importance to Indigenous knowledge holders were already expressed in the SPM, in the key messages or somewhere deeper in the body of the Full Report. Participants acknowledged the efforts made by IPBES, and the ILK knowledge holders who worked with them through dialogues, to recognise the contributions of IPLCs to support and conserve pollinators and habitats across the planet. However, the discussions during the Hin Lad Nai Dialogue suggest that IPLCs would give certain messages more prominence and weight, compared to how they were currently presented in the SPM. Key issues around pollinators and pollination and responses to those would have been framed differently, putting more emphasis on overall landscape strategies, on values other than economic, in particular cultural and spiritual values, and on investing in relational values, stewardship ethics and notions of reciprocity and

respect for the natural world. Specifically, more attention should be focused on the negative outcomes from policies which impose protected areas on Indigenous territories and thereby prohibit landscape management that contributes to protect pollinators; and from policies that promote IPLCs taking up monocropping and intensive use of pesticides which destroy pollinators. These inconsistent policy directions need to be reconciled within a comprehensive approach to sustainable governance of social-ecological landscapes, where policy- and decision makers from different sectors are communicating. Such notions were present in the SPM (and present in particular in Chapter 5 of the assessment), but it was argued that they hold a peripheral position.

We heard from several participants that in their knowledge systems, pollination is often not articulated as a separate phenomenon, but rather is understood as part of the systemic linkages between plants, animals, landscape and people in a wider holistic understanding. Their importance is acknowledged in many different ways, for example through the key role of beeswax and honey in ceremonies and rituals, and the role of bees as teachers and role models, providing insight into cooperation and a culture of learning, as exemplified in this report. As we move forward to policy uptake of the Assessment, it is important to consider these responses. Value systems, systemic thinking and holistic understanding, and emphasising the fundamental reciprocity of humans and nature, are central for conservation efforts. Most importantly, policy uptake requires ensuring that economic decision-makers and actors from the business sector are equally engaged in the conversation, and listening and learning together with scientists, and with Indigenous peoples and local communities living in the landscape and practicing customary sustainable use.

Further, the discussions identified that IPLCs generate important sources of data for monitoring and understanding pollinator decline and solutions, as they observe closely changes and trends over time. Indigenous peoples in attendance reported decreases in different pollinators such as bees in Kenya, or birds and bats in New Zealand – and also how such changes impacted the wellbeing of local communities. The Local Biodiversity Outlooks are one opportunity for IPLCs to share their data and monitoring in ways that align with ILK systems and where control remains within the community.

Concerning risks, we saw in the discussions that the direct drivers of land use change and pesticide use are well understood in ILK systems, and are recognised as critical drivers that require immediate risk management. It is viewed

as a great step forward that ILK practices that support pollinators and pollinator habitats are given recognition in the SPM, as part of the responses and solutions. However, what is still missing is sufficient and more explicit acknowledgment that the knowledge systems and governance systems that maintain these practices and habitats are themselves under threat throughout the world. For the practices to continue, conditions are required that support the IPLCs who implement them – including diverse food systems, farming systems, cultural practices, values and education systems. Supporting the roles of IPLCs is viewed as fundamental to other ways forward, rather than as one component under “transforming agricultural landscapes”, which is how it is currently framed in the SPM.

Second objective: To contribute to the development of methodological guidance on recognising and working with ILK in IPBES, including through the IPBES participatory mechanism.

We have developed a concept for dialogue and weaving knowledge through walking workshops. It is based on a MEB approach and was piloted within the biocultural landscape and practices of Hin Lad Nai, shared experiences, and mobile posters with key messages as tools to implement the five tasks presented in Figure 4. From the evaluations of the Dialogue we see that this approach has managed to create excitement and engagement among all participants – and it appears that they all find value in the experience, whether they are local ILK holders, visiting ILK experts, or academics. The evaluation confirms our reflections as organisers that holding the Dialogue in the rotational farming system and the Dialogue being hosted by the Hin Lad Nai community was critical to learn from actual experiences on the ground and promote meaningful dialogue among participants. The Dialogue was held in a place where the multiple values of community forest management and the rotational farming are apparent and easy for all to engage with. The ILK holders and experts from the Karen community have a long experience of working together to strengthen their knowledge and practices, and are well prepared to share their knowledge and philosophies about their landscape. Their community setting facilitates sharing on equal terms, and creates conditions in which local ILK holders and experts can also benefit and learn from the exchange of ideas and information, and incorporate any relevant learning into their own activities as they deem appropriate; both in their local communities and in the policy-making process at local, national and even global levels. We think this finding has important implications for weaving knowledge in IPBES and beyond, and is worthy of further testing.

We also affirm that the engagement with ILK holders from the very beginning of the process is of great importance for a successful workshop. The contents, scope, and

implementation of the Dialogue were convened and co-designed in close cooperation with ILK holders and representatives from the Karen community from the onset when the idea for the Dialogue was born in Medellín (Colombia) during the 6th IPBES Plenary. This occurred through Prasert Trakansuphakon who was part of the discussions in Medellín representing the organisations IMPECT and PASD that are Indigenous organisations with their roots in the Karen communities in Northern Thailand. The identification of common interests and the negotiation of a mutually agreed-upon working agenda with multiple goals were critical to ensuring the engagement of all participants throughout the Dialogue.

The evaluations by participants shows that the Dialogue managed to bring ILK holders into a constructive, motivating and mutually beneficial conversation with other actors. Equally, the scientists, including current and former IPBES MEP members and assessment authors, found it interesting and valuable to interrogate the quality of the assessment and its key messages in a thorough and detailed manner. The development of the pollinator assessment was a major challenge and much new ground was being broken at the time. It was valuable to sit with the final result and engage in meaningful reflection with the holders of pollinator and habitat knowledge. Translating the relatively complex, dense text of the SPM into a set of highly-visual posters in both English and Thai language was an important step to enable the MEB approach. We found the posters acted as effective “boundary objects”, connecting with the diverse participants including the ILK-holders, scientists and policy actors, and supporting interactive discussions. At the request of participants, we have made the posters available to be translated into other languages.

We believe that the Dialogue and this report carry value in showing that it is possible to connect ILK holders and ILK experts with scientists in constructive discussions about assessment topics, even though such topics may be somewhat abstract compared to the local realities in many communities. However, we hope that this report also shows that successful dialogues require careful preparations and collaborative partnerships sustained and nurtured over time. We need to continue to move forward to overcome the challenges involved with weaving knowledge systems – in terms of hierarchies and power imbalances between knowledge systems, openness of science for different knowledge systems, respectful engagement with diverging understanding, and capacities across actors to engage in meaningful and genuine intercultural dialogues. This is needed in order to change collectively owned conventional mindset structures defining not only what counts as knowledge, but also how the interface between different knowledge systems should unfold in practice. In the case of this Dialogue, the SPM was shared and used in the Dialogue, which provided context but also limited the scope for the



Dialogue participants in Hin Lad Nai gathered for the closing ceremony. Photo: J. Bumroongchai

discussions. Creation of safe spaces, that continue to build opportunities, constructive forum, and capacities for dialogue, is critical to facilitate the necessary changes in mindsets and transform hierarchies towards equity across knowledge systems, within IPBES and beyond.

Our Free Prior and Informed Consent (FPIC) agreement led to rich discussions that opened up the spectra between the values of sharing knowledge, and the importance of the right to protect knowledge that is secret or for other reasons not appropriate to share with outsiders. On the other hand, the vision for the Dialogue is about developing trust for equal sharing, reciprocity, and mutual benefits. The conditions should be safe for everyone to share the knowledge that they would like to contribute. We recognise and respect that in some ILK systems, knowledge sharing rules specify that sharing can only happen in certain places, and by, with and to certain individuals with the right connections under customary institutions. Thus, it is of critical importance to protect the institutions that ensure ILK and to contribute to the capacity of ILK holders to assess the risks involved with sharing their knowledge, and of researchers and others to fully implement and respect FPIC in all contexts. FPIC will remain important in the movement towards full recognition and respect of ILK and rights of IPLCs.

Third objective: To support Hin Lad Nai and the Karen people, to link their knowledge to the science-policy interface, and strengthen the respect and recognition of the Karen rotational farming system, and its contributions to conservation and sustainable use of biodiversity.

A key message from the community in the Dialogue was that recognition and respect for their collective rights to territory and the practice of the rotational farming system is critical for their future. They asked for the support of their ongoing efforts to achieve that – along e.g. with the SPM recommendation to support “biocultural diversity” conservation approaches through recognition of rights, tenure and strengthening of indigenous and local knowledge and traditional governance that supports pollinators. The Hin Lad Nai community and the fellow Karen used the topic of pollination to convincingly illustrate the value of the rotational farming system for biodiversity and forest conservation, and how it is embedded in a culture, a way of living, and a philosophical tradition. The international visiting group recognised and admired the Karen rotational farming system, and found that several of the local-level policy responses that foster pollinators and reverse pollinator decline, as described in the SPM, were actually practiced in Hin Lad Nai. This provided an opportunity to connect



Welcome to the Hin Lad Nai forests, gardens and farming areas, where people, culture and biodiversity thrive. In 2013, Hin Lad Nai was declared a “Special Cultural Zone”, which is a mechanism for supporting the Karen people in recognition of their cultural rights and their ancestral territories based on the framework of a Cabinet Resolution from the Thai Ministry of Culture. Photo: P. Malmer

global policy discourses with local realities in a meaningful and engaging way. For the community, this led to further acknowledgement of their knowledge and its value – also in interaction with and learning from other ILK systems.

The open seminar at Chiang Mai University on 25 January 2019 became an important opportunity to draw on the support from the visitors to voice the perspectives of the Karen communities in discussions with national government representatives and researchers. In particular, the rotational farming system and Karen knowledge of biodiversity conservation and pollination had a prominent place in this discussion. It was an important opportunity for Karen people, the government and academia to reflect on these matters together in an open conversation. At the seminar, the representatives from the government recognised the value of forest protection by the Karen people, and also some of the challenges that the communities face. It is our hope that the use and wide distribution of this report will strengthen and leverage the concerns, as well as the capacity, of local communities who are making important contributions to pollination, biodiversity conservation, as well as livelihoods and human wellbeing.

Fourth objective: To support the uptake of the Pollination Assessment in local, national and international decision-making and policy.

The open seminar at Chiang Mai University was also central for our last objective, to support the uptake of the

Pollination Assessment in local, national and international policy. The Dialogue was an experiment in connecting the assessment’s relevance at all three levels. We conclude that it is possible to create this relevance at the local level, in ways that also have implications for national decision-making and international forums and processes. The conditions for this were developed in the extensive preparations and co-design leading up to the Dialogue, during the Dialogue itself, and especially during the seminar day, which focused in particular on exploring the relevance of the assessment and modes of implementation at the national level.

Implementing the key messages of SPM and reversing the serious decline in pollinators worldwide, will require interconnected changes in behaviour, policy, and practice across the diversity of structures and scales where policy and decision-making take place at different scales. The final discussions of the Dialogue brought forward the need for transformations: first of food systems towards sustainability; second of how biodiversity conservation practices views and engages with IPLCs; and third of the relationships between knowledge systems for ecosystem governance towards respect and collaboration. Shifting societies’ relationship with nature, one of the key messages in the SPM suggests, is fundamental to all three. Furthermore, as this report and the Dialogue strongly demonstrate – considering the togetherness of nature and culture is a critical component of this paradigm shift, offering synergies for biological and cultural diversity, ecosystems and human wellbeing at large.

Key references

- Athayde, S. F., Stepp, R., and Ballester, W., 2016. **Engaging Indigenous and Academic Knowledge on Bees in the Amazon: Implications for Environmental Management and Transdisciplinary Research.** *Journal of Ethnobiology and Ethnomedicine*. 12:26.
- Brondizio, E.S., and Tourneau, F.-M.L., 2016. **Environmental governance for all.** *Science*. 352(6291), pp.1272-1273.
- Díaz, S. et al., 2015. **The IPBES Conceptual Framework – connecting nature and people.** *Current Opinion in Environmental Sustainability*, 14(1), pp.1-16.
- Díaz, S. et al., 2018. **Assessing nature's contributions to people.** *Science*, 359(6373), pp.270-272.
- Dicks, L. et al., 2016. **Ten policies for pollinators.** *Science*, 354(6315), pp.975-976.
- Hill, R., Nates-Parra, G., Quezada-Euán, J.J.G., Buchori, D., LeBuhn, G., Maués, M.M., Pert, P.L., Kwapong, P.K., Saeed, S., Breslow, S.J., Carneiro da Cunha, M., Dicks, L.V., Galetto, L., Gikungu, M., Howlett, B.G., Imperatriz-Fonseca, V.L., O'B. Lyver, P., Martín-López, B., Oteros-Roza, E., Potts, S.G., Roué, M. (2019) **Biocultural approaches to pollinator conservation.** *Nature Sustainability* 2, 214-222. doi: 10.1038/s41893-019-0244-z.
- IPBES. 2016. **Summary for policymakers of the assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services on pollinators, pollination and food production.** Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany.
- IPBES. 2016. **The Assessment Report on Pollinators, Pollination and Food Production.** Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany
- Lyver, P., Perez, E., Carneiro da Cunha, M., and Roué, M. (eds.), 2015. **Indigenous and Local Knowledge about Pollination and Pollinators associated with Food Production: Outcomes from the Global Dialogue Workshop (Panama 1-5 December 2014).** UNESCO: Paris.
- Malmer, P., Tengö, M. (eds), Abudulai, S., Chituwu, C., Gebeyehu, F., Gichere, N., Daguitan, F., Mburu, G., Muriuki, M., 2018. **International exchange meeting and walking workshop: Experiences from piloting a Multiple Evidence Base approach for mobilisation of indigenous and local knowledge for community and ecosystem wellbeing. Tharaka, Kenya. 6 – 11 March 2017.** Workshop report. SwedBio at Stockholm Resilience Centre, Stockholm, Sweden.
- Malmer, P., Tengö, M., Belay Ali, M., Cadalg Batang-ay, M.J., Farhan Ferrari, M., Mburu, G., Mitambo, S., Phokha, C., Trakansuphakon, P., 2017. **International exchange meeting for mobilisation of indigenous and local knowledge for community and ecosystem wellbeing. Hin Lad Nai, Chiang Rai province, Thailand. 13 – 15 February 2016.** Workshop report. SwedBio at Stockholm Resilience Centre, Stockholm, Sweden.
- Mistry, J. and Berardi, A., 2016. **Bridging indigenous and scientific knowledge.** *Science*, 352(6291) pp.1274-1275.
- Pascual, U., et al., 2017. **Valuing nature's contributions to people: the IPBES approach.** *Current Opinion in Environmental Sustainability* 26–27:7-16.
- Schultz, M., Hahn, T., Hällström, N., and Ituarte-Lima, C., 2016. **The biggest single opportunity we have is dialogue - Dialogue seminars as a methodology for transformative social learning and conflict resolution in international environment negotiations, SwedBio at Stockholm Resilience Centre.**
- Tengö, M., et al. 2017. **Weaving knowledge systems in IPBES, CBD and beyond—lessons learned for sustainability.** *Current Opinion in Environmental Sustainability* 26–27:17-25.
- Tengö, M., et al. 2014. **Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach.** *Ambio*, 43(5), pp.579–591.
- Tengö, M., Malmer, P. (eds), Borraz, P., Cariño, C., Cariño, J., Gonzales, T., Ishizawa, J., Kvarnström, M., Masardule, O., Morales, A., Nobrega, M., Schultz, M., Soto Martinez, R., and Vizina, Y., 2012. **Dialogue workshop on Knowledge for the 21st Century: Indigenous knowledge, traditional knowledge, science and connecting diverse knowledge systems. Usdub, Guna Yala, Panama, 10 – 13 April 2012.** Workshop Report. Stockholm Resilience Centre.
- Timoti, P., Lyver, P. O., Matamua, R., Jones, C. J., and Tahi, B. L., 2017. **A representation of a Tuawhenua worldview guides environmental conservation.** *Ecology and Society*, 22(4):20.
- Trakansuphakon, P. and Hin Lad Nai Community. 2017. **Mobilising Traditional Knowledge, Innovations and Practices in rotational farming for sustainable development. A contribution to the Piloting of the Multiple Evidence Base Approach from the community of Hin Lad Nai, Chiang Rai, Thailand.** Report. Co-produced by PASD and SwedBio at Stockholm Resilience Centre, Stockholm, Sweden.
- Trakansuphakon, P. 2008. **Space of Resistance and Place of Local Knowledge in Karen Ecological Movement of Northern Thailand.** *Japanese Journal of Southeast Asian Studies* 45(4):586–614.
- Zurba, M., Maclean, K., Woodward, E., and Islam, D., 2018. **Amplifying Indigenous community participation in place-based research through boundary work.** *Progress in Human Geography* 0 (0):0309132518807758

ANNEX I. Dialogue agenda

Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production

21 to 25 January 2019, Chiang Mai and Hin Lad Nai, Thailand

Time	Agenda	Facilitators / coordinators
	Saturday 19 or Sunday 20 January Arrival and stay at Papa Garden Resort or Horizon Village for the first nights.	
	Monday 21 January	
	<i>Meeting at IMPECT office meeting room at Sansai District, Chiang Mai Province</i>	
8.00 am	Set off from Papa Garden and Horizon Village to IMPECT office	IMPECT and PASD
8.30 am	Karen traditional welcome	IMPECT and PASD
9.00 am	Participants introduction round	Pernilla Malmer Prasert Trakansuphakon
9.30 am	Introduction to the Dialogue – Agenda for 21–25 January – Overview of the Dialogue process – Introduction to draft FPIC	Pernilla Malmer Prasert Trakansuphakon
10.00 am	Break	
10.30 am	Introduction to what IPBES is and its assessments methodology – IPBES presented with posters – Role of different actors. – How to use IPBES for Indigenous peoples and local communities' goals?	Ro Hill Interactive session involving everyone's experiences from different fields
Cont.	Connecting across knowledge systems based on equity, reciprocity and usefulness for all Introduction to the Multiple Evidence Base approach	Maria Tengö
Cont.	FPIC discussion continued, until agreement	Pernilla Malmer Prasert Trakansuphakon
12.00 – 1.00 pm	Lunch	
1.00 – 2.30 pm	Sharing experiences from a diversity of cases involving pollination, pollinators and food production	Interactive session Presentation based on participants' posters and stories
2.30 – 3.00 pm	Presentation of the IPBES assessment on pollination, pollinators and food production	Ro Hill Lynn Dicks
3.00 – 4.30 pm Coffee and tea during group discussion	Discussion in groups about local experiences and key messages of the 3 areas of the IPBES pollinator assessment: – Values of pollinators and pollination – Status and trends in pollinators and pollination – Drivers of change, risks and opportunities, and policy and management options	
4.30 – 5.00 pm	Reporting back from groups and discussion in plenary	

Time	Agenda	Facilitators / coordinators
5.00 – 6.00 pm	Preparation for setting off to Hin Lad Nai – Overview about Hin Lad Nai and the community e.g. natural resource management, rotational farming and bee keeping – Necessary Information how to prepare ourselves for the stay in Hin Lad Nai e.g. about cultural sensitives, things we need to take with us, etc.	
6.00 pm	Dinner Arranged at Akha Ama Coffee place at Mae Rim, with Special Organic Food products from Rotational Farming by a well-known chef from a restaurant in Chiang Mai.	
	Tuesday 22 January	
8.00 – 10.00 am	Travel from hotels to Hin Lad Nai	IMPECT and PASD
10.00 am – 12.00 pm	Settling down in Hin Lad Nai with host families Inauguration ceremony with community leaders, local government and others in the community hall	Hin Lad Nai Community PASD and IMPECT
12.00 – 1.00 pm	Lunch	
1.00 – 2.00 pm	Meeting with the village leaders – Presenting Hin Lad Nai, the community and its history – Further introduction to the process of the walking workshop and how it will lead to the expected outcomes of the Dialogue	Hin Lad Nai Community PASD and IMPECT
2.00 – 5.00 pm (tea, water and fruit brought to the site)	Walking workshop to the northern forest This is the watershed where a few old trees survived the logging concession that the community shockingly experienced in the 80's. On the way we will pass by the royal bee and beekeeping area in the tea gardens, as well as the forest area and the agroforestry and vegetable gardens by the village. – While in the forest, we will sit for a group discussions on the Pollinators Assessment key messages on values	Guiding the way: Hin Lad Nai Community Group discussion in 4 mixed groups with interpreters around posters that present key messages from the Pollinators Assessment
5.00 – 6.00 pm	Reporting back from the four group discussions together in the community meeting hall (after returning from the walk)	Ro Hill Nigel Crawhall
6.00 pm	Dinner	
7.00 – 8.00 pm	Light conversation and introduction to the ILK Centres of Distinction, and the Community Based Monitoring (CBMIS)	Joji Cariño Prasert Trakansuphakon
	Wednesday 23 January	
6.00 am	Option for early birds: Rice pounding with the women	Hin Lad Nai Community
7.00 am	Breakfast	
8.00 am – 12.00 pm	Walking workshop to the fallow area Walking through the fallows and the rotational farming fields with their diversity of plants, trees, flowers - and pollinators. This is all very closely linked to food sovereignty and security. – While in the fallow, we'll have a group discussion linking to the key messages in the Pollinators Assessment on drivers of change, risks and opportunities, and responses, as well as status and trends.	Guiding the way: Hin Lad Nai Community elders and pollinator experts Group discussion in 4 mixed groups with interpreters around posters that present key messages from the Pollinators Assessment
12.00 pm	Lunch in the shadow, nearby the fallow land, and continuation of the group discussion after that	Lunch organised by Hin Lad Nai community
4.00 pm	Return to Hin Lad Nai and Tea break	

Time	Agenda	Facilitators / coordinators
4.30 pm	Debrief/reflections from group work in the fallows	Ro Hill, Nigel Crawhall
5.30 pm	Introductory discussion about confidence, and what is meant with that in an IPBES assessment context	Ro Hill, Maria Tengö
7.00 pm	Dinner and cultural night Evening together in the Hin Lad Nai school, with participants sharing dance, songs, stories and foods from their cultures	Hin Lad Nai Community PASD and IMPECT
	Thursday 24 January	
6.00 am	Optional early morning walk before breakfast	Hin Lad Nai Community
7.00 am	Breakfast	
8.00 am	Conclusions regarding relevance and uptake of key messages from the Pollinators Assessment, and way forward – <i>What is useful for me to take home and implement? How can I use material to advocate to policymakers? How can IPLCs be supported in these efforts?</i>	Maria Tengö Prasert Trakansuphakon
10.00 am	Tea break	
10.30 am	Discussing and developing future plans to promote this information to international level – Introduction to the Coalition of the Willing on Pollinators – FAO, Pollinator Focal Point – IPBES, UNESCO, CBD. – Activities of the ILK Centres of Distinction – Evaluation of the Dialogue	Joji Carino Nigel Crawhall
12.00 pm	Lunch in the bamboo house	
1.00 – 3.00 pm	Finalisations and preparation of presentations for the seminar day on 25 January in CMU	Prasert Trakansuphakon Maria Tengö
3.00 pm	Closing ritual and ceremony	Hin Lad Nai community PASD and IMPECT
4.00 pm	Leave Hin Lad Nai to Chiang Mai Participants will stay at Papa Garden and Horizon village respectively	PASD and IMPECT
	Free evening and planning for the seminar day	
	Friday 25 January	
	Seminar day at Chiang Mai University <i>Linking Indigenous, local and scientific knowledges and practices in Thailand to global policymaking through the IPBES Assessment on Pollinators, Pollination and Food Production (see separate programme)</i>	Local host: the Centre of Ethnic Studies and Development (CESD) at Chiang Mai University together with PASD, IMPECT, UNESCO, SwedBio, SRC
	Saturday 26 January Departure to home countries and home villages.	

ANNEX II. Participant list

Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production

	First name	Last name/surname	Organisation	Country of affiliation
INTERNATIONAL PARTICIPANTS				
Africa				
1	John	Lengoisa	Ogiek Peoples' Development Program	Kenya
Asia				
2	Joji	Cariño	Forest Peoples Programme and ILK Centres of Distiction	Philippines, Global
3	Chico	Cariño	Tabaan Sur Barangay	Philippines
4	Madhav	Karki	Centre for Green Economy Development and IPBES	Nepal, Global
5	Thingreiphi (Athing)	Lungharwo	Naga Women Union	India
6	Ei Ei Min	Naw	Promotion of Indigenous and Nature Together	Myanmar
7	Saw Thet	Naing	Promotion of Indigenous and Nature Together	Myanmar
8	Salai Ling	Houng	Promotion of Indigenous and Nature Together	Myanmar
9	Pae Phyo	Maung	Promotion of Indigenous and Nature Together	Myanmar
Oceania				
10	Brenda	Tahi	Tuhoe Tuawhenua Trust	New Zealand
11	Atamira	Tumarae	Tuhoe Tuawhenua Trust	New Zealand
12	Emma	Woodward	Commonwealth Scientific and Industrial Research Organisation	Australia
13	Ro	Hill	Commonwealth Scientific and Industrial Research Organisation	Australia
Europe				
14	Maria	Tengö	Stockholm Resilience Centre	Sweden
15	Pernilla	Malmer	SwedBio at Stockholm Resilience Centre	Sweden
16	Daniele	Crimella	SwedBio at Stockholm Resilience Centre	Sweden
17	Maurizio Farhan	Ferrari	Forest Peoples Programme	UK, Global
18	Nigel	Crawhall	UNESCO Small Islands and Indigenous Knowledge section	Global
19	Abram	Bicksler	FAO Ecosystem Management and Agroecology team	Global
20	Martijn	Thijssen	Promote Pollinators (Coalition of the Willing on Pollinators)	Netherlands
21	Lynn	Dicks	University of East Anglia	UK
22	Álvaro	Fernández-Llamazares	University of Helsinki	Finland
Americas				
23	Simone	Athayde	University of Florida and Federal University of Tocantins	USA, Brazil
24	Elmer	González	Fundación para la promoción del conocimiento indígena	Panama
25	Julio	Lopez Maldonado	Universidad de San Carlos de Guatemala	Guatemala
26	Edgar	Pérez	Fundación Junej T'inam	Guatemala
27	Ruth	Spencer	GEF/SGP and MEPA Trust	Antigua and Barbu-da

	First name	Last name/surname	Organisation	Country of affiliation
Thailand, LOCAL PARTICIPANTS				
28	Prasert	Trakansuphakon	Pgaz K' Nyau Association for Sustainable Development	Thailand
29	Nutdanai	Trakansuphakon	Honey social innovation enterprise	Thailand
30	Janthane	Pichetkulsamphan	Inter Mountain Peoples Education and Culture in Thailand Association	Thailand
31	Robin	Roth	Center of Ethnic Study for Development, Chiang Mai University	Thailand
32	Chaiprasert	Phokha	Community leader and beekeeping expert, Hin Lad Nai	Thailand
33	Pricha	Siri	Indigenous and Local Knowledge Holder, Hin Lad Nai	Thailand
34	Hpa ti Noo	Papa	Shaman, Hin Lad Nai	Thailand
35	Nivet	Siri	Stingless bee expert, Hin Lad Nai	Thailand
36	Daochai	Siri	Youth women leader, Hin Lad Nai	Thailand
37	Chaithawat	Chomti	Royal bee expert, Hin Lad Nai	Thailand
38	Naw Aeri	Thung Muangthong	Women leader, Huey E Kha community	Thailand
39	Haruthai	Phokha	Youth women, Hin Lad Nai	Thailand
40	Niraporn	Japhaw	Youth women, Hin Lad Nai	Thailand
41	Siwakorn	Odochao	Coffee innovation social enterprise, Nong Tao community	Thailand
42	Jorni	Odochao	Karen philosopher, Nong Tao community	Thailand
43	Dilok	Trakulrungsamphai	Indigenous and local knowledge holder, Mae Yod community	Thailand
44	Asek	Silapachipvilai	Youth leader, Mae Yod community	Thailand
45	Yanika	Thamun	Women leader, Mae Yod community	Thailand
46	Kwanruthai	Kitprathiptham	Women leader, Mae Yod community	Thailand
47	Janmo	Dararattanakit	Bee expert, Mae Lan Kham Community	Thailand
48	Bancha	Muhae	Young expert on beekeeping, Pa Pae community, Doi Chang	Thailand
Thailand, SUPPORT TEAM				
49	Chupinit	Kesmanee	Lecturer, Srinakharinvorot University. Interpretation Thai – English	Thailand
50	Kamonrat	Chayamarit	Lao PDR liaison officer, UNESCO Bangkok office. Interpretation Thai – English	Thailand
51	Sirivimol	Kitaphanish	Rai Ruen Rom organic farm owner. Interpretation Thai – English	Thailand
52	Songpolsak	Rattanavilailak	Manager, Pgzaz K' Nyau Association for Sustainable Development. Interpretation Thai – English	Thailand
53	Carina	Zur Strassen	Suan Lahu organic coffee farm. Interpretation Spanish – Thai – English	Thailand

ANNEX III. Summary of Dialogue evaluation from participants

Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production

21st to 25th January 2019, Chiang Mai and Chiang Rai, Thailand

The evaluation was completed by 33 participants.

What was positive with this Dialogue?

Participants evaluated the logistics of the Dialogue as outstanding, noted the collaborative effort of all partners and particularly appreciated the welcoming attitude of the Hin Lad Nai community. The learning experience was appreciated because of the generous way in which Indigenous peoples shared their knowledge of land use systems, of which beekeeping is one part, and because discussions were linked to the IPBES, a global process.

The methods applied were positively evaluated, in particular the “walking workshop” that allowed participants to experience together the natural context. Participants appreciated the respectful attitude towards all, which was key to create an atmosphere where participants felt welcomed and comfortable to share their knowledge and thoughts openly in spite of the cultural differences. Facilitation strategies managed to create an atmosphere of respect. Translation provided the necessary conditions for inclusion. Including Indigenous peoples gave voice to groups that usually are not heard, and connected their perspective with the IPBES. Bringing together ILK holders and scientists allowed for learning across knowledge systems. Learning was perceived as an outcome of horizontal sharing.

“The hosting from the Hid Lad Nai community [...] provided the positive space and friendly atmosphere for everyone to feel welcomed and confident to make their equally valuable contributions”

“The ‘walking workshop’ method proved to be an excellent tool to connect global discourses to local realities in a meaningful way”

“Openness exhibited in the Dialogue as a result of built trust and believe in FPIC”

What could have been done better?

Inclusion could be improved by making sure to bring more women and elderly experts into the Dialogue. It was also suggested that participation could be enhanced by collectively defining the framing to discuss issues, instead of using previously formulated approaches. Furthermore, participants mentioned that time allocation could be improved. However, there was no indication among respondents about what activity required more or less time. Also, facilitation strategies could have better managed politically emotive moments.

“Next time it would be great to have a women’s session with senior women knowledge holders engaged in discussion with other female participants with a female translator (cultural-context appropriate).”

“Ideally, FPIC is a two-way conversation not just a process of collecting signatures. I think this could have been a discussion of how knowledge systems interact, and what is the basis of the interaction determined by the participants, rather than simply an agreement to a formal document, with the possibility to edit it.”

Follow-up wishes

Along with answering the question “What could be done better”, participants also expressed wishes that the outcome of the Dialogue gets disseminated and the report written in local language. They also wish that it could be served to make a difference in their local realities, for instance by organising communities in the region to give support to those in need.

“Suggestion: create the day of pollinators for calling attention at global level”

ANNEX IV. FPIC, as signed by participants

Free Prior Informed Consent (FPIC) for access and external sharing of knowledge and insights shared from Indigenous peoples and local communities during the “Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production” 21–24 January 2019.

Background and goals for FPIC

This is a Dialogue built on equal sharing and joint learning across knowledge systems and cultures. The aim is to create an environment where people feel comfortable to speak on equal terms as an important precondition for a true dialogue.

Within the framework of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), indigenous peoples are rights holders including the right to maintain, control, protect and develop their traditional knowledge (Article 31). FPIC applies to research or knowledge-related interactions between Indigenous peoples and outsiders (including researchers, scientists, writers, etc.). There may be information shared during the Dialogue which the holders or the overall community considers sensitive, private or holding value for themselves and which they do not want to share into the public domain.

The FPIC sought here concerns all sharing of the knowledge, often collectively held, from Indigenous peoples and local communities during and after the Dialogue workshop

We emphasise the following important features of the meeting for a good process:

- Equality of all participants and absence of coercive influence. Nobody’s perspectives or opinions is more important than anyone else.
- Listen with empathy and seek to openly understand each other’s viewpoints.
- Bringing assumptions into the open.

We all want the reflections and outcomes of the Dialogue to be distributed and inspire actions that are mutually beneficial for all. We want everyone to feel safe and free to share.

It is important to discuss where and how the learning and information will travel after the Dialogue workshop. Participants include those based in communities, and those mostly engaged in activities like research and policy. It is important that no information from the meeting is used or interpreted in a way that is different from what it was aimed at.

During the meeting, new knowledge may also be co-generated among participants in the workshop. Information about collaboration between knowledge systems would be useful to share in presentations, reports, and journal articles that will be widely shared and spread.

The UNESCO hosted Technical Support Unit on ILK is dealing with Indigenous perspectives on the IPBES post-assessment process, including reflecting on the outcomes and recommendations and the potentially national or regional policy uptake. UNESCO has a policy on Indigenous peoples and is bound by the principles of the UNDRIP. For UNESCO, as co-convenor of the Dialogue the aim will be to promote awareness of the interaction of Indigenous knowledge and science, Indigenous knowledge and policy making, and how Indigenous peoples engage with the IPBES processes, their analyses, critiques and recommendations.

Processes for FPIC

We are seeking FPIC to share information during and after the Dialogue workshop. There will be a report produced from the meeting, including photos. Everyone is invited to contribute to the report. A draft of the report will be circulated in English to all workshop participants for review, comment and approval. The photos in the report will also be circulated for approval of those who are visible. You will have 2 weeks to comment and approve the report subject to any changes you request. As guardians of the knowledge of your community, you may need to seek approval from your community for the inclusion of some of the information that is in the report. Once approved, the report will be published on line with Open Access (are we using a Creative Commons License e.g. <https://creativecommons.org/licenses/by/4.0/>). This means that other people will be able to use parts or all of the report for non-commercial purposes provided they acknowledge the source.

In case there might be other kind of sharing of information and outcomes after the Dialogue, such as through social media, no photos will be shared without the

consent of the persons occurring in these photos. In the same way, any quotation of people will always be approved before being distributed.

Giving Consent

I consent to the information that I share at this Dialogue to be recorded, and my photograph taken, in recognition that:

- A discussion on the FPIC rights of the indigenous peoples has been held at the outset and I am aware that it may be revisited during the duration of the workshop;
- At any point during the meeting, anyone can decide that they do not want particular information to be documented or shared outside of the meeting.
- A draft of the report and photos that will be shared, including through web, media, journal articles etc., will be shared with me for review and approval.
- After the meeting, the organisations and persons present representing the respective communities; will be the “guardians” of the use of the knowledge and insights. That means that any use of their collective community knowledge will be discussed and approved by them. As required the guardians will seek approval from the local communities.
- Organisers as well as other participants from the Dialogue will contact the organisations and persons representing the respective communities when they need advice or consent concerning the use of community knowledge arising from the workshop.

Name, organisation and signature for participants in the Dialogue

Annex V. International Seminar at Chiang Mai University, Friday 25th January 2019

Indigenous, local and scientific knowledge's for management of Pollinators, Pollination and Food Production

The final day of the week, an IPBES uptake and capacity building event was held at Chiang Mai University. It was co-convened by the Centre for Ethnic Studies (CESD) at Chiang Mai University and the organisers of the Dialogue in Hin Lad Nai; PASD, IMPECT, UNESCO and SwedBio at Stockholm Resilience Centre. This international seminar was an opportunity for Thai academics, government, IPBES authors in the area, media, national and local organisations of indigenous peoples, farmers and food producers to familiarise with the IPBES and the Pollination assessment, and discuss how to take advantage of its key messages in their Thai local and national context. The IPBES authors and ILK holders and experts from the Dialogue in Hin Lad Nai contributed presentations. Experiences from the last day's seminar in Hin Lad Nai were shared, reflecting the importance of IPLCs and their ILKP to governance of pollinators and pollination in food production, with examples from the Karen rotational farming system and the ILK holders and experts from other parts of the world. A discussion on how knowledge systems best can collaborate in assessments was held, based on the experiences from the Dialogue in Hin Lad Nai, and other experiences from Chiang Mai University, the Multiple Evidence Base transdisciplinary project, and others in the audience. The seminar became an important opportunity for sharing and discussion across actors in Thailand. In particular, the rotational farming system and the Karen knowledge for biodiversity conservation and pollination got a prominent place in this discussion, and it was an important opportunity to reflect these matters between Karen people, the government and academia. It was also an important moment to explore how collaboration across Indigenous, local and scientific knowledge systems can come together as equally valid, with relevance for the governance and management of the social-ecological systems and biocultural landscapes in northern Thailand.

During the Dialogue in Hin Lad Nai, the challenges regarding the recognition of the Karen people and the rotational farming were brought up from various perspectives. Below, the discussion at the CMU seminar on this topic is summarised.

The co-chairs Dr. Chamnien Vorrantnchaiphan (IUCN) and Dr. Maria Tengö (SRC) opened the seminar and expressed gratitude for the event and for the attendance of so many participants. An opening ceremony was held with traditional Karen music and a prayer by a Karen Elder. The Vice President of Chiang Mai University, Associate Professor Dr. Aworn Opatpatanakit warmly welcomed the participants.

Dr. Asdaporn Krairapanond, Inspector of Ministry of Natural Resources and Environment, in her keynote speech said she was very glad to learn about the workshop in the Karen community. She explained the Thai national policies on biodiversity, and stressed the need to preserve, conserve, and share the biodiversity treasures of Thailand with next generations. The government has recently updated their National Biodiversity Strategy and Action Plan. It links to the SDGs, and includes good quality of life and the environment. Access and benefit sharing are at the hearth of the new plan, and it also includes the idea of a biobank, where traditional knowledge can be used to try to identify the usefulness of species. There are also work ongoing on a new framework for biodiversity conservation. It was stressed ILPCs will hopefully benefit from this change, giving them more rights and abilities to control their production and biodiversity. There is also a plan to increase organic farming which will benefit pollinators.

Chief Chaiprasert Phoka from Hin Lad Nai expressed his appreciation of the speech, and asked about forest dwellers and their rights to use the forest. Dr. Asdaporn Krairapanond explained that the national land management plan is now being amended and the legal framework will change. When in place, it should give the right to local people to stay in the forest and continue to practice rotational farming.

Another Karen leader spoke about National Parks being implemented on their lands without their consent or their participation in the planning. He requested the Ministry to respect their way of life as people who live in the forest. Dr. Krairapanond responded that she is aware of these conflicts and that she has raised concerns about the fact that these villages have problems with the establishment of Protected Areas. She said that they will continue to improve public



The young Karen musician Bancha shares traditional songs at the opening of the international seminar. Photo: P. Malmer

participation, in order to change the mindset and the bad image of the villagers. She wants to encourage her staff at the Ministry to engage in participation at community level in the planning; this is one of the priorities of the Ministry. She stated “We are at the process of coming up with methodologies on how to increase the number of trees in the forest, and where there are communities that live in the forest, we do not have the plan to remove the people from the forest. We are going to amend the legal code so that the people do not have to leave the forests, and thus can stay in their land legally, and continue practicing their agriculture. We will continue to follow these policies”.

Dr. Malee Sithikriangkrai on behalf of Chiang Mai University, presented what they had been doing from their side with regards of support for the understanding of the situation for the Indigenous peoples practicing rotational farming. As an example, they have had youth group documenting their practices in Hin Lad Nai, and shared about how to plant, how to select seeds, and how to live in harmony with nature.

Usually CESD works more closely with the communities than policy makers, and they have observed how villagers negotiate with government officers to learn about their struggles and needs. Communities have paid a lot of attention to human rights, especially related to lands and protected areas. She said that their observation from CESD is that communities are very concerned and since 1995 they have

argued with the government for their land rights. They have been trying to show the government how they live in concert with the forest, and that they should not be blamed for land destruction. She also stressed that villagers have hope that the government will take time to listen to them. Today, there are many villages coming and ask for help from CESD to interact with policy makers. Having a dialogue is beneficial, she said, but only when the parties have equal authority. There has for a long time being an argument that people and forests cannot live together, but this is not true, she said. Finally, she urged everyone to create more research and solutions together. We may need to also remember education as an important tool, and not only think about development, she concluded.

During the day, rich discussions did also reflect in depth regarding pollinators, pollination and food production, and about how collaborations across knowledge systems, such as in the IPBES, can support to connect knowledge and policy, for more informed decisions on law and policy. The importance of including IPLCs who have been living with and using biodiversity over the years was stressed by many, and in that context, it was said that this symposium was a good start and it was appreciated that we could be here together learning from one another. We have all learned a lot about pollinators and biodiversity and the Karen and Indigenous way of knowing. This is a stepping stone towards enhanced knowledge for policy that secures nature's contributions to people in sustainable societies in harmony with nature.

About the report

The “Dialogue across Indigenous, local and scientific knowledge systems reflecting on the IPBES Assessment on Pollinators, Pollination and Food Production” took place 21 – 25 January 2019 in the Karen community of Hin Lad Nai, Chiang Rai, Thailand. It was co-convened by the Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT) and Pgakenyaw Association for Sustainable Development (PASD) together with SwedBio at the Stockholm Resilience Centre and the UNESCO Natural Science Sector. Many of the Dialogue participants had been engaged in the IPBES thematic Assessment of Pollinators, Pollination and Food Production, and included Indigenous pollinator experts from different parts of the world, including Antigua and Barbuda, Guatemala, India, Kenya, Myanmar, New Zealand, Panama and the Philippines. Together with local Indigenous pollinator experts, and global, national and local scientists and policy actors they reflected on the key messages of the IPBES Pollination Assessment and suggested pathways for better policy and practices in pollinator and biodiversity management. The science team included Lead Authors of the Assessment.

The IPBES Assessment on Pollination, Pollinators and Food Production was the first IPBES thematic assessment, and was viewed as a pilot of the procedures for working with Indigenous and local knowledge in assessments. It made important steps in advancing collaboration across knowledge systems, and contributed to IPBES’ role in progressing the frontiers of sustainability science. The Hin Lad Nai Dialogue followed IPBES’ *approach to recognising and working with Indigenous and local knowledge*, by developing participatory methods in a post-assessment and policy uptake context.

SwedBio

is a programme at the Stockholm Resilience Centre, contributing to poverty alleviation, equity, sustainable livelihoods and social-ecological systems rich in biodiversity that persist, adapt and transform under global change such as climate change. SwedBio enables knowledge generation, dialogue and exchange between practitioners, policy makers and scientists for development and implementation of policies and methods at multiple scales.

Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT)

is an Indigenous organisation working with Indigenous peoples in northern Thailand sharing similar situations and experiences and applying traditional knowledge and practices to all aspects of development work. The four main areas of action are: Cultural Revival and Alternative Education, Promotion of the Environment and Natural Resource Management, Enhancement of Indigenous Peoples’ Movements and Networks and Indigenous Peoples’ Rights.

Pgakenyaw (Pgaz K’ Nyau) Association for Sustainable Development (PASD)

is a community-based organisation of the Pgaz K’ Nyau people (Karen) in Thailand. PASD works for the recognition to the Karen people and their rights and livelihoods in policy and legal frameworks. A main strategy for achieving this recognition is through creation of “Special Cultural Zones” which is a mechanism for recognition Indigenous rights to their cultural livelihood, land and territory. Further, PASD focus on community development and income generation through Non-Timber Forest Products for Indigenous communities and their youth. Strengthening of the Karen Indigenous knowledge such as *Blauf* – the traditional cultural centers; *Hta* – poems and traditional songs, and *Taj leplez* – story telling are other important areas.

UNESCO Natural Science Sector

works to advance and promote science in the interests of peace, sustainable development and human security and well-being, in close collaboration with its Member States and a wide variety of partners. The Small Islands and Indigenous Knowledge Section of UNESCOs Natural Science Sector hosts the IPBES Technical Support Unit for Indigenous and Local Knowledge.



Contact:

Address: SwedBio at Stockholm Resilience Centre,
Stockholm University, SE – 106 91 Stockholm, Sweden
Visiting address: Kräfriket 2b
Telephone: +46 8 674 70 70
Email: swedbio@su.se

Find more information at:

www.stockholmresilience.su.se
www.swed.bio

SwedBio is funded by the Swedish International Development Cooperation Agency (Sida)