Copyright © 2025 by the author(s). Published here under license by the Resilience Alliance. Open Access. CC-BY 4.0
Pawłowska-Mainville, A. 2025. Creating a quiet buzz: opportunities and challenges for meaningful participation of boreal forest apiarists in the science-policy interface for biodiversity and ecosystem services. Ecology and Society 30(1):19. https://doi.org/10.5751/ES-15559-300119

Insight, part of a Special Feature on Beyond the Assessment on the Diverse Values of Nature: Hidden gems, Biases, Frontiers, Challenges, and Insights

Creating a quiet buzz: opportunities and challenges for meaningful participation of boreal forest apiarists in the science-policy interface for biodiversity and ecosystem services

Agnieszka Pawłowska-Mainville [1,2,3]

ABSTRACT. Boreal apiary and beekeeping are characteristic of Eastern Europe and are passed down from generation to generation. Boreal apiary relies on ecological and cultural knowledge to protect honeybee diversity, change forestry practices, and ensure sustainable livelihoods. In this article I discuss the participation of Polish apiarists in the science-policy interface for biodiversity and ecosystem services IPBES Values Assessment and the Indigenous and Local Knowledge (ILK) meetings. Although the process permitted recognition of boreal apiary at a global stage, several obstacles, including essentialist typologies and Anglophone scientific discourses, convoluted meaningful participation. By elaborating on the apiarists' ecocultural knowledge, I summarize the IPBES ILK Process, the limitations of active engagement by the apiarists, and offer considerations to make science-policy interface ILK engagement more inclusive for culture-custodians.

Key Words: *boreal apiary; essentialist typology; IPBES values assessment; intangible cultural heritage; Poland; tree-beekeeping*

INTRODUCTION

In 2022, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published the Assessment Report on the Diverse Values and Valuation of Nature known as the "IPBES Values Assessment" (IPBES 2022a). The assessment evaluated the relationships between people and nature, including the various ways in which people relate to, value, and depend on biodiversity and ecosystem services. One notable aspect of the assessment was its emphasis on recognizing and respecting Indigenous and local knowledge, and how these epistemologies play a crucial role in providing insights into understating nature. Community members were involved through the Indigenous and Local Knowledge (ILK) group to respond to the findings. I worked with a cluster of apiarists and tree-beekeepers who joined several ILK meetings and contributed a report to IPBES.

The contributions of the boreal apiarists were crucial to the Values Assessment, as they provided rich insights into the cultural and social values associated with beekeeping and tree-beekeeping, reflecting Poland's intangible cultural heritage. Despite their engagement being marked by genuine humility and a desire to represent their traditions, the process was challenging because of language barriers, differing interpretations of cultural values, and discomfort with the hierarchical structures of scientific discourse. This complexity highlighted the need for more culturally and linguistically sensitive methodologies to fully appreciate and integrate local knowledge in global biodiversity discussions. By illustrating how essentialist discursive typology impacts meaningful and inclusive participation of knowledge-holders in the Values Assessment, I suggest how the intangible cultural heritage lens can offer IPBES several considerations in their work with culture-custodians. Two research questions explore the main challenges faced by Polish apiarists in participating meaningfully in the IPBES Values Assessment and ILK meetings: (1) How do essentialist frameworks and Anglophone scientific discourses hinder the effective engagement of boreal apiarists in global biodiversity and ecosystem services discussions? (2) How can the discourse of intangible cultural heritage, as outlined in the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (UN 2003), improve IPBES's assessments and community-based engagement processes to better include non-Anglophone culture-custodians?

The paper has three research objectives (1) to present the contributions of Eastern European boreal apiary practices to honeybee diversity and the promotion of sustainable forestry practices; (2) to identify and assess the impact of inherent classifications and Anglophone scientific discourses on the engagement of culture-custodians in global discussions on values and ecosystem services; and (3) to explore the significance of intangible cultural heritage (ICH) in enhancing the recognition and effective participation of culture-custodians within the science-policy interface for biodiversity and ecosystem services.

THE IPBES FRAMEWORK AND THE ILK TASK FORCE

IPBES relies primarily on knowledge drawn from peer-reviewed scientific literature to ensure credibility, legitimacy, and relevance (IPBES 2018). For the Values Assessment, the social and ethical dimensions of values related to nature were also examined through grey literature, citizen science, and through the Indigenous and Local Knowledge (ILK) Task Force within IPBES, in conjunction with its chapter ILK liaison groups who directly spoke with Indigenous and local community members. The primary purpose of the Task Force and the ILK Liaison Group were to develop "practical and appropriate methods to incorporate ILK and issues concerning IPLCs [Indigenous Peoples and Local Communities] into IPBES assessments" (IPBES 2022b:6).

Between 2019 and 2022, the ILK Task Force conducted meetings to establish a database, review literature findings, assess gaps, and gather perceptions. Although the Task Force intended to engage with a different community each year, the pandemic interrupted these plans in 2020, leading to virtual meetings that included a

[1]University of Nicholaus Copernicus in Toruń (Poland), [2]University of Northern British Columbia (Prince George, Canada), [3]UNESCO Chair in Living Heritage and Sustainable Livelihoods (Canada)

PowerPoint presentation summarizing IPBES, outlining the main objectives of the assessment, and detailing the methodology and findings. A one-hour discussion session allowed community participants to pose questions to the ILK Task Force and provide feedback on the findings. As a result, the IPBES assessments integrate ILK insights and contribute to public-facing policies aimed at conserving biodiversity, ecosystem services, and ecocultural livelihoods.

These virtual meetings, while a necessary adaptation to the pandemic, underscored both the potential and limitations of remote engagement with Indigenous and local communities. Despite the challenges, the Task Force succeeded in maintaining a dialogue that enriched the assessments with diverse perspectives. This ongoing engagement ensured that the assessments remained inclusive and reflective of the lived experiences and knowledge systems of those directly interacting with their natural environments. Moving forward, the lessons learned from this shift to virtual meetings may inform future methodologies for integrating ILK into global environmental assessments. The ability to adapt to unforeseen circumstances while still achieving meaningful participation and data collection highlights the resilience and flexibility of the ILK Task Force. Continued commitment to these inclusive practices is crucial for developing robust policies that are grounded in both scientific rigor and the deep-rooted knowledge of intangible cultural heritage custodians.

Ecosystem monitoring methods used by boreal forest apiarists inherently incorporate linguistic terms that encapsulate complex social-ecological knowledge and cultural practices. Contributions from these apiarists provide valuable insights into ecosystem services such as pollination, as well as the cultural and social values associated with beekeeping and innovative sustainable practices. To understand the role of boreal apiary practices in Eastern Europe in protecting honeybee diversity and promoting sustainable forestry practices, we must also examine the challenges faced by Polish apiarists in achieving meaningful participation in the IPBES Values Assessment and ILK meetings. This examination highlights the need to address the impact of essentialist typologies and Anglophone scientific discourses. Incorporating multilingual knowledge systems into global discussions on biodiversity and ecosystem services exposes the difficulties these practitioners encounter in expressing their values and practices within dominant Anglophone scientific paradigms and essentialist frameworks. Integrating the discourse of intangible cultural heritage, as framed by the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, can enrich IPBES assessments by acknowledging and valuing the intergenerational, context-dependent knowledge of boreal apiarists, thereby incorporating their cultural practices into global biodiversity dialogues.

Methods: engaging with the apiarists

One of the key elements of community-based and Indigenous research is establishing a relationship of trust between the researcher and the community member(s) (Tuhiwai-Smith 1999). For the IPBES Values Assessment, researchers were encouraged to engage with communities with which they already had established relationships. This approach drew me to the Values Assessment. As a Lead Author of the Values Assessment and a member of the Indigenous and Local Knowledge (ILK) Liaison group, I invited a group of apiarists to contribute to the assessment. I leveraged personal engagements with several academics and knowledge-holders, which led to further invitations through word-of-mouth. Additionally, I sent 18 letters of invitation to various apiarists, honey producers, beekeepers, tree beekeepers, and organizations in Poland, inviting them to participate in drafting the collective report.

Starting in 2020, 13 individuals regularly contributed to discussions on values, many of whom were already familiar with each other or had collaborated on previous work. When I invited them to contribute to the Values Assessment, they responded with humility, feeling honored to represent the bees and highlight an aspect of Poland's cultural heritage. The "Apiary Group,"[1] comprising both men and women, met online bi-monthly to explore various facets of "values" in tree-beekeeping and beekeeping. I began each meeting with informal questions such as, "What values do apiary and tree-beekeeping contribute to sustainability and culture?" and "How relevant are these values for the 21st century?" The responses were supplemented with examples and references to key studies and initiatives. Over time, discussions deepened, sometimes evolving into debates, disagreements, and compromises, often extending well beyond two hours across three different time zones. I drafted the report based on our notes, and during two live meetings with the entire group, we collectively revised sections, adjusted terminology, and clarified content by screen-sharing and reviewing the document together. The goal was to ensure the report truly represented their voices rather than just featuring them. Consequently, the document avoided academic jargon and style, focusing instead on demonstrating the importance of bees and the cultural and social values associated with boreal apiaries in Eastern Europe.

To ensure respectful and accurate representation of the apiarists' perspectives, I adopted a multilingual approach throughout our discussions and the drafting of the report. Although most IPBES discussions and documents are conducted in English, many Polish apiarists felt more comfortable expressing their ideas in Polish because many did not speak English. Although technical terms related to biodiversity and ecosystem services can be translated, the deeper meanings tied to cultural values, practices, and knowledge systems are often at risk of being lost or misinterpreted. To address this, I encouraged participants to use their own linguistic expressions when explaining key ideas and later translated these concepts into English for the report, striving to convey the nuances through detailed explanations. This approach not only allowed participants to articulate complex ideas about the values embedded in their practices more comfortably but also underscored the importance of linguistic diversity in engaging local knowledge-holders. By incorporating Polish terms and cultural references into the final report, we preserved the integrity of local knowledge and practices, enabling a global audience to appreciate the specificities of boreal apiary traditions. This approach aligns with the broader objectives of the IPBES framework, which emphasizes culturally and linguistically sensitive methodologies, and the intangible cultural heritage (ICH) discourse, which highlights the knowledge, practices, and values passed down through generations.

By conceptualizing the apiarists' knowledge as ICH, I ensured that local knowledge was not overshadowed by dominant scientific paradigms and Anglophone scientific discourses. The ICH framework fosters effective participation of culture custodians by valuing the living traditions and practices that contribute to biodiversity. Emphasizing the role of apiarists as both practitioners and stewards of their natural and cultural landscapes, our discussions revealed how essentialist frameworks, primarily framed within Anglophone typologies and discourses, tend to categorize complex cultural practices into rigid definitions that fail to capture the nuances of local knowledge systems expressed in heritage languages. These inherent classifications impeded the apiarists' engagement, leading to doubts about the validity of their knowledge, practices, and even engagement in the ILK process. This reflexivity highlighted additional discomfort with the hierarchical nature of formal knowledge systems, which often prioritize Western scientific methodologies and identity politics over local types of knowledges.

Moreover, the loose use of terms such as "Indigenous" and "local community" further compounded confusion about the participants' roles in meetings framed around these identifiers. Given that all members of the group were active practitioners, and several were also scholars and foresters, these terms complicated their engagement as "Indigenous and local community" members with diverse and expert perspectives. The inconsistency associated with these terms not only hindered effective dialogue but also obscured the valuable contributions that practitioners and scholars could make to discussions about integrating local knowledge with formal methodologies. By framing culture custodians' contributions through the ICH lens, however, IPBES can move away from essentialist classifications, recognizing that their participation encompasses not only economic or scientific input but also the cultural and socio-linguistic values embedded in their practices and own self-identifications. Embracing the ICH discourse and adopting culturally and linguistically grounded, context-based methodologies in engagement processes will enable IPBES to value linguistic diversity and more fully honor the voices and values of non-Anglophone culture custodians in future assessments.

RESULTS: CULTURAL APIARY AS LIVING HERITAGE

Apiary practices have existed for millennia across the world (Darchen 2003, Szymusik 2006). In Poland, there are various forms and levels of beekeeping (Wróblewski 2009; Apiary Group, *personal communication*, 21 March 2020). Beekeeping, including tree beekeeping—the practice of placing hives high up in trees within forests—has long been a characteristic of the boreal landscape and has been passed down through generations (Szymusik 2006, Wróblewski 2009). Social and historical factors have led to a decline in tree beekeeping, creating a rift in its continuity across many regions of Eastern Europe. However, recent concerns about pollinator sustainability and the inclusion of the practice on the UNESCO List of Intangible Cultural Heritage of Humanity in 2020 have revitalized tree beekeeping and apiary traditions. By exploring the values associated with beekeeping, the group aimed to contribute to policy making efforts to safeguard local biodiversity, heritage elements, and pollinator forest habitats.

Key Message 1: Boreal apiary practices in Eastern Europe play a crucial role in protecting honeybee diversity and promoting sustainable forestry practices. This aligns with the research question focused on highlighting the ecological and cultural contributions of these practices to global biodiversity discussions. Apiary values and protocols are deeply intertwined with culture and the intrinsic nature of bees. Bees exemplify nature's collaborative ingenuity, functioning as a unified organism despite being composed of individual bees. Honeybees (*Apis mellifera mellifera*) are not merely "farming animals" but integral and sovereign components of the ecosystem; they cannot be fully "captured" or controlled by humans (Apiary Group, *personal communication*, 20 February 2020). Boreal apiary practices are grounded in a reciprocal relationship between the beekeeper, the bees, and their environment. In contrast to industrial honey beekeeping—which typically involves large-scale operations with intensive management practices, including hive transportation for pollination services aimed at maximizing honey yields—"free-living" boreal forest bees are cared for by the beekeeper with minimal emphasis on honey production (Apiary Group, *personal communication*, 21 March 2020). One participant described this relationship as a blend of specialized knowledge, skills, and humility, because it requires all these elements to attract and maintain bees and for them to share their honey (Apiary Group, *personal communication*, 3 June 2020). For many beekeepers, boreal apiary represents a living heritage of "our primordial human relations with nature, where humans adapt to nature rather than forcing nature to change for human needs" (Apiary Group, *personal communication*, 21 March 2020).

Maintaining a special rapport with the bees is a value passed down through cultural transmission, interwoven with distinct ecocultural knowledge and skills. Beekeepers typically inherit hives from their ancestors, though modern apiarists also construct new tree hives themselves. This process requires knowledge in selecting the right tree, building the hive, attracting the bees, and protecting them throughout the year. The beekeeper engages in various physical activities that foster mutually beneficial interactions, such as tending to the hives, inspecting the condition of the hives and trees, and ensuring the bees receive adequate sunlight in the spring. To keep the bees warm and comfortable, the beekeeper insulates the hive entrance with moss and leaves in late autumn. This insulation also serves as a shield against wild animals like bears and badgers that might seek honey, as well as birds such as woodpeckers attracted to the hibernating bees inside the tree. Additionally, the beekeeper cleans the hive by removing insect corpses and feces and inspects the site for diseases like varroa and rot. During particularly harsh seasons, the beekeeper may forgo harvesting honey to ensure the bees' survival, sacrificing their own supply of bee products for the well-being of the bees.

These practices reflect a deep commitment to sustaining both the bees and their natural habitat, demonstrating a profound understanding of and respect for the ecological balance. Such dedication underscores the vital role of ecocultural knowledge in maintaining the health of bee populations and preserving the cultural heritage associated with apiary practices.

Key Message 2: Polish apiarists face significant challenges in participating meaningfully in the IPBES Values Assessment and ILK meetings because of factors such as essentialist typologies and language barriers. This addresses focusing research objectives on the impact these obstacles have on effective engagement of culture-custodians. IPBES aims to facilitate dialogues that are "part of a range of activities aimed at IPLC participation, with an overall aim of facilitating the explicit and coherent cross-cutting incorporation of ILK views and IPLC needs into the assessment" and provide feedback regarding "strengths, gaps and additional sources of information" (IPBES [date unknown]a, IPBES [date unknown]b). However, interpreting the practice of boreal apiary within the framework of "ILK views" and "IPLC needs" proved challenging for the apiarists. Although tree beekeeping and apiary are millennia-old heritage practices indigenous to Poland, framing these activities as "traditional," "indigenous," or as part of "local communities" raised significant issues related to essentialism. Essentialism refers to the reduction of a group or cultural identity to a set of simplified, often stereotypical traits, limiting their inclusion (Spivak 1999). It can also lead to exclusion by suggesting that certain traits are inherent and unchangeable aspects of identity, thereby overlooking the diversity and complexity of individuals' experiences (Said 1978, Bhabha 1994, Doxtator 1996, Hall 1996, Spivak 1999, LaRocque 2010). Although the Values Assessment relied on established IPBES Terms of Reference aimed at fostering inclusion, navigating certain Anglophone political terms in an international context brought challenges of "fitting in/not fitting in enough" to these typologies. Consequently, the apiarists struggled to articulate their ecocultural knowledge within these foreign categorizations, because their practices did not neatly align with the imposed frameworks.

Key Message 3: The ICH discourse offers a valuable framework for recognizing the contributions of culture-custodians and enhancing their participation in the science-policy interface for biodiversity and ecosystem services. This aligns with the research objective, highlighting how the ICH discourse, as outlined in the 2003 UNESCO Convention, can play a significant role in fostering effective engagement of culture-custodians. By emphasizing the intergenerational transmission of knowledge, practices, and values, the ICH framework ensures that culture-custodians are not merely contributors but equal participants in global biodiversity discussions. Managing the overall health and productivity of honeybees involves not only observation and research aimed at improving their well-being, but also activities that support habitats conducive to pollination, such as planting bee-friendly flowers and crops, and advocating against forest monoculture. Boreal apiarists often collaborate to ensure the availability of pollinator nesting sites and respite areas in both natural and urban spaces, while also working to reduce pesticide use and limit pollinator competition in agricultural and municipal areas. Through knowledge exchange with other professionals and scholars, they actively address threats to the genetic survival of wild bees in Eastern Europe by promoting local decision making, protecting bee families from parasites and diseases, and advocating for heritage-based education, old-growth forest conservation, and the protection of native plant species (Pawłowska-Mainville 2022).

Incorporating the discourse of intangible cultural heritage, as outlined in the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, can enhance IPBES assessments by recognizing and valuing the intergenerational, context-specific knowledge of boreal apiarists, thus integrating their cultural practices into global biodiversity discussions. This approach promotes inclusive participation by allowing culture custodians to define their own discourses and frameworks for self-identification and decision making related to nature, biocultural diversity, and human well-being (Pawłowska-Mainville 2023). By developing recommendations for the inclusive integration of the ICH framework—specifically related to ecocultural knowledge of boreal apiary and tree-beekeeping—into assessments, platforms like IPBES can enhance their community-based engagement processes and impact decision making. This ensures that local knowledge-holders are acknowledged not only as contributors but as equal partners in biodiversity and ecosystem services policy making.

DISCUSSION: MANEUVERING AROUND ESSENTIALISM

Contributions from boreal apiarists offer valuable insights into pollination, the cultural and social values associated with beekeeping, and innovative sustainable practices, all of which can significantly enhance biodiversity and ecosystem services. As the lived experiences of the Apiary Group members demonstrate, tree beekeeping represents a cumulative body of knowledge and ecocultural expertise grounded in a mutualistic relationship with honeybee pollinators. By engaging in these nuanced practices, tree beekeepers showcase how, despite technological advancements and environmental degradation, reciprocal relationships with lifeforms continue to thrive in Europe. This interdependence between bees and tree beekeepers is deeply tied to the resilience and health of their shared environment. Ultimately, these practices contribute to biodiversity conservation, the safeguarding of cultural heritage, and the promotion of sustainable livelihoods, embodying a model of coexistence rooted in mutual benefit and ecological stewardship.

Essentialist typologies and Anglophone scientific discourses highlight the need to incorporate multilingual knowledge systems into global discussions on biodiversity and ecosystem services. For the Apiary Group, translating key terms was more than just a linguistic challenge; because language is a carrier of culture, and boreal apiary is deeply embedded in socio-linguistic meanings, translating or explaining values profoundly alters how these intricate indigenous ecocultural practices are understood. For example, the terms "Indigenous [and local] knowledge" (ILK) and "traditional [ecological] knowledge" (TEK) were incomprehensible to the apiarists. One major reason is that in Polish, there is no equivalent concept for TEK or ILK. Knowledge is viewed holistically, without distinctions like "traditional" or "ecological"; it is simply knowledge.

Similarly, the notion that certain forms of knowledge are inherently "Indigenous" was met with questions about urbanization, positionality, education, and political identities, further complicated by language loss and restricted access to this knowledge. The apiarists contended that anyone dedicated to years of apprenticeship under a knowledge-holder could acquire

beekeeping knowledge, making it difficult to grasp that political identity might limit this acquisition. Trying to express the apiarists' values within dominant (Anglophone) discourses about seemingly distinct knowledge categories felt like an imposition of foreign academic and theoretical frameworks onto local socio-cultural and linguistic realities. For the apiarists, beekeeping knowledge is not exclusive or static; it is living knowledge, continuously refined through time, effort, and contemporary practices.

Scientific discourse within the ILK context further complicated the discussions of values. Although it is essential to establish boundaries around semiotics and typology, rigid definitions of who belongs to a specific group based on simplified characteristics and identities create political implications of exclusivity and inclusivity. These often fail to align with non-academic narratives and localized discourses. The intent here is not to diminish the political significance of the term ILK for groups who rely on its framework to attain resource sovereignty and territorial self-determination, particularly in settler states where ethno-politically distinct groups use "Indigenous" to assert justice. However, the term "Indigenous" carries many floating signifiers, a reason it remains undefined in the United Nations Declaration on the Rights of Indigenous Peoples (UN 2007). Though the complexities of this definition exceed the scope of this discussion, IPBES' use of the term in a global context introduces challenges by complicating peoples' interpretations of their own ecocultural practices.

For instance, although tree beekeeping is an indigenous or autochthonous practice of the boreal forest in Eastern Europe, the question of whether it should be considered an "Indigenous practice" involving biologically indigenous species complicated its classification. The apiarists did not necessarily seek to identify as Indigenous peoples (with a capital "I"); many were unfamiliar with the term and felt uneasy about associating their cultural heritage with what they perceived to be the distinct and politically charged category of "Indigenous peoples" or "local communities." Consequently, ambiguous and strategic essentialist discourses, often rooted in Anglophone frameworks, narrowed the scope and depth of the apiarists' participation in the assessment. This risked reducing their centuries-old indigenous practice to an abstract and oversimplified classification, potentially circumscribing its global significance.

Likewise, the capitalization (or not) of the letter "I" in the term "indigenous" muddled our interdisciplinary discussions of values in boreal apiary because it felt like there was an expectation to fit certain typologies associated with a specific political identity into the description of beekeeping values. One apiarist asked if using some of these IPBES key terms in English offers more attention to a practice at the global stage. Similarly, will IPBES consider the voices and values of beekeepers more if they are framed as "traditional" and "indigenous"? And does IPBES perceive a knowledge-holder with a university degree differently from a "traditional" knowledge-holder without one? The fact that some of the apiarists had a university education added to the complexity of the issue. Although they recognized that Indigenous scholars may hold doctoral degrees, there was a question about whether one form of knowledge (i.e., TEK) is understood to be ontologically different than other knowledge systems associated with the same practice (such as positivist knowledge) and if only "traditional" knowledge is an imperative for [I]ndigeneity in the Values Assessment.

A similar socio-etymological challenge arose when Anglophone popular science terms were applied to values around relationality embedded in the Polish language. For instance, the terms "bee family" and "mother bee" in Polish are translated into English as "bee colony" and "queen bee." This translation led to stimulating debates over semantics, with the term "colony" being difficult for the group to accept because it inaccurately conveyed the relationship beekeepers have with bees; it implied a distance and lack of connection between humans and bees. For the apiarists, the relationship is one of care and reciprocity, where beekeepers tend to the bees' homes, protect them from disease, and shield them from threats, while the bees, in turn, provide honey, wax, and propolis. The translation removed the sense of familial and symbiotic connection central to their practices, making it harder to articulate the values behind this deeply intertwined relationship. As a result, to make their message clearer for the global and Anglophone audience (including for IPBES), the group felt compelled to adapt their cultural terminology to fit more scientific and academic concepts, though it was a challenging process that risked losing the essence of their ecocultural values.

Our collective inability to address some of these questions left the group feeling somewhat intimidated about participating alongside other ILK participants. After one of the ILK Task Force meetings, an apiarist shared that his reluctance to engage actively in the discussions came from his own perceived expectation that an "Indigenous practice" must involve "traditional" livelihoods and "non-European" knowledge. This experience highlights how dominant-language academic discourses and typologies can overshadow unique positionalities, as well as culturally specific ontological and socio-linguistic understandings of peoples' relations to the world and their own cultural expressions. The pressure to conform to preconceived notions of what constitutes "Indigenous knowledge" can thus marginalize practices that do not fit neatly into such frameworks, ultimately inhibiting meaningful participation of intangible cultural heritage custodians in global discussions.

Therefore, to ensure inclusive engagement, IPBES is encouraged to integrate the intangible cultural heritage (ICH) lens into its assessments and policy-making processes. Practices and values are often expressed and communicated through the unique social and linguistic characteristics of a particular community. Utilizing ICH elements, as identified by the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, would help recognize and acknowledge these practices as markers or identifiers of culturally and linguistically distinct people. When documenting or preserving ICH, it is crucial to pay attention to the specific linguistic and social nuances of the cultural or ethno-linguistic group in question. Rather than relying solely on political categories, community-defined ICH expressions and ethnonyms would have more effectively conveyed the apiarists' unique characteristics and ecocultural values. This approach would allow for a more respectful and decentralized engagement with knowledge-holders.

Although certain IPBES terms fell short in capturing the apiarists' values, and prevailing linguistic norms constrained the discourse by categorizing their intangible cultural heritage elements into limited boxes, the group discovered unique ways to convey their living practices and values. The apiarists' participation illustrates that when dealing with ecocultural practices, it is vital to acknowledge both, the diversity and the similarity of human identities and cultures, and that all of them are complex. Distinct local socio-linguistic expressions in the participants' native languages can enhance discussions on biodiversity and ecosystem services. However, the global science-policy interface must first learn to recognize and value heritage languages.

CONCLUSION

To conclude, the IPBES Values Assessment is commendable in its inclusion of grassroots voices in the report. Identifying features of the local ecocultural heritage within an appropriate context ensures adequate terminology and multilingual inclusivity. The Polish apiarists who contributed to the Values Assessment found that certain IPBES terms inadequately represented their values. Language constraints and the need to fit intangible cultural heritage into predefined categories limited the nuanced expression of their cultural values tied to boreal apiary. Boreal apiary is a highly complex, autochthonous practice in Poland, disrupted yet revitalized, featuring cultural elements adapted to contemporary circumstances and resilient ecocultural knowledge. The relationship between apiarists and bees is deeply intertwined, marked by interdependence and symbiosis: the tree beekeeper safeguards ecosystems that support wild honeybees in trees, while the bees pollinate surrounding flora, contributing to ecosystem productivity and providing honey, beeswax, propolis, and a vibrant soundscape, which brings the apiarists joy in the early spring. This practice offers rich social-ecological perspectives on our relationships with indigenous species and the cultural values that shape them. The apiarists' participation underscores the need to challenge essentialist typologies in academic discourse and to embrace both the diversity and complexity of human identities and cultures.

Although the inclusion of the ICH lens would have provided a more cross-culturally inclusive and holistic framework to address complex issues related to cultural and environmental safeguarding, the apiarists were proud of their involvement and enthusiastically shared their beekeeping values with IPBES. Incorporating local socio-linguistic expressions would have allowed participants to articulate their values in their own terms, even if these were grammatically, politically, or discursively unconventional. Creating meaningful space for effective inclusion of knowledge-holders and culture-custodians in future IPBES assessments ultimately requires allowing them to speak in their own discourse, free from external categorizations.

[1] The group consisted of three individuals representing a community foundation, two university professors who are beekeepers, two members of forest district who are tree-beekeepers, a podcaster who is a beekeeper, and several culture-custodians including other tree beekeepers, hobby apiarists, and pollinator advocates. Three individuals consulted with other members of their communities, including with Byelorussian tree-beekeepers and other tree beekeepers who were not able to participate in the live discussions. The author's family also had bees.

Author Contributions:

APM did the research, engaged with the apiarists, managed the Apiary Group, and wrote the article. However, this article would not be possible without the apiarists and knowledge-holders who have shared their insights and experiences with me and whose contributions to this publication and to IPBES and science-policy interface for biodiversity and ecosystem services made this publication happen. It is they who keep apiary and the practice of tree-beekeeping alive and APM provides a platform for their voices to be heard.

Acknowledgments:

This research was funded in whole or in part by the National Science Centre in Poland and the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 945339, Project No. Polonez Bis1 2021/43/P/HS2/01350, titled "Exchanging Knowledges on Best Practices in Folklore and Intangible Cultural Heritage Safeguarding." For the purpose of Open Access, the author has applied a CC-BY public copyright license to any Author Accepted Manuscript (AAM) version arising from this submission. I also express my gratitude to the cultural apiarists and knowledge-keepers who are working to keep the ecocultural knowledge of tree-beekeeping alive and who shared, and continue to share, their insights and voices with me.

Data Availability:

Data/code sharing is not applicable to this article because no data and code were analyzed in this study.

LITERATURE CITED

Bhabha, H. K. 1994. The location of culture. Routledge, London, UK. https://doi.org/10.4324/9780203820551

Darchen, B. 2003. L'apiculture de la préhistoire à l'histoire. P.L. B. Editions, Guadeloupe.

Doxtator, D. 1996. Fluffs and feathers. Woodland Cultural Centre, Brantford, Ontario, Canada.

Hall, S. 1996. Introduction: Who needs 'identity'? Pages 1-17 in S. Hall and P. du Gay, editors. Questions of cultural identity. SAGE, Thousand Oaks, California, USA. https://doi.org/10.4135/9781446221907.n1

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2018. The IPBES guide on the production of assessments. IPBES Secretariat, Bonn, Germany. https://files.ipbes.net/ipbes-web-prod-public-files/180719_ipbes_-assessment_guide_report_hi-res.pdf

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2022a. Assessment report on the diverse values and valuation of nature. IPBES secretariat, Bonn, Germany.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2022b. Methodological guidance for recognizing and working with indigenous and local knowledge in IPBES. IPBES Secretariat, Bonn, Germany. https://files.ipbes.net/ipbes-web-prod-public-files/inline-files/IPBES_ILK_MethGuide_MEP-Approved_5MAY2022.pdf

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). [date unknown]a. ILK dialogue workshop for the first order drafts of the sustainable use assessment. IPBES Secretariat, Bonn, Germany. https://www.ipbes.net/events/ilk-dialogue-workshop-first-order-drafts-sustainable-use-assessment

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). [date unknown]b. ILK dialogue workshop for the second order draft of the assessment of the sustainable use of wild species. IPBES secretariat, Bonn, Germany. https://www.ipbes.net/events/ilk-dialogue-workshop-second-order-draft-assessment-sustainable-use-wild-species

LaRocque, E. 2010. When the other is me: Native resistance discourse, 1850-1990. University of Manitoba Press, Winnipeg, Manitoba, Canada. https://doi.org/10.1515/9780887553929

Pawłowska-Mainville, A. 2022. "Experts and professionals": intangible cultural heritage custodians and natural resource management in Poland and Canada. Pages 2383-2392 in F. Calabrò, L. D. Spina, M. J. Piñeira Mantiñán, editors. New metropolitan perspectives: post Covid dynamics: green and digital transition, between metropolitan and return to villages perspectives. Lectures Notes in Networks and Systems, vol. 482. Springer, Cham, Switzerland. https://doi.org/10.1007/978-3-031--06825-6_228

Pawłowska-Mainville, A. 2023. 'Stored in the bones': safeguarding Indigenous living heritages. University of Manitoba Press, Winnipeg, Manitoba, Canada. https://doi.org/10.1515/9781772840476

Said, E. W. 1978. Orientalism. Vintage Books, London, UK.

Spivak, G. C. 1999. A critique of postcolonial reason: toward a history of the vanishing present. Harvard University Press, Cambridge, Massachusetts, USA. https://doi.org/10.2307/j.ctvjsf541

Szymusik, B.. 2006. Historia pszczelarstwa polskiego w zarysie. Sądecki Bartnik, Stróże, Poland.

Tuhiwai-Smith, L. 1999. Decolonizing methodologies: research and Indigenous peoples. Zed Books, London, UK. https://doi.org/10.5040/9781350225282

United Nations. 2003. UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage. UN, New York, New York, USA.

United Nations. 2007. United Nations Declaration of the Rights of Indigenous Peoples. UN, New York, New York, USA.

Wróblewski, R. 2009. Krótka Historia Pszczelarstwa Polskiego. [A short history of Polish beekeeping]. Sądecki Bartnik, Stróże, Poland.