People in Nature: An IUCN Knowledge Basket

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Abstract

IUCN initiated the development of the People in Nature (formerly Human Dependence on Nature – HDN) knowledge basket at the 2012 World Conservation Congress in Jeju, Korea. At that time, a steering group was formed with representation from the IUCN secretariat, Commission on Environmental, Economic and Social Policy and its cross-commission themes and members. The aim of the knowledge basket is to promote the uptake of existing knowledge and generate new knowledge on the interrelationship between humans and nature, focusing on the use and reliance on ecosystem services and their contribution to local livelihoods and well-being. In order to meet this aim a process has been initiated to develop approaches, tools and standards along with associated capacity building. This will support better data collection, documentation and understanding of local social-ecological contexts that are relevant to policy formulation and development interventions and that result in tangible improvements to livelihoods and well-being.

Workshops held during 2013 identified the need to link development and conservation through the People in Nature (PIN) knowledge basket to complement existing IUCN knowledge products with a conservation focus (e.g. Red List of Threatened Species). This led to a focus on the multi-faceted role that species and ecosystems play in the lives of remote, rural and coastal populations, recognizing that for many indigenous peoples and local communities in such regions there is a reliance upon the harvest of species from forest, aquatic, marine/coastal dryland and grassland ecosystems for subsistence and as a source of cash income. While provisioning has often been treated through an economics lens, it was emphasized that this material utility is often underpinned by deep-seated cultural norms, values and beliefs and the use of species and ecosystems is also an expression of individual and group identity. PIN has been developing conceptual thinking to ensure its approach integrates cultural processes into provisioning practice while noting that there are other symbolic interrelationships with both species and landscapes that also must be considered.

This presentation will provide an overview of the PIN knowledge basket and progress to date and set the context for the four conceptual discussion papers that follow. The goal of PIN is to build partnerships, linkages and synergies with other researchers, practitioners and agencies working on the interrelationships between people and nature. This panel will provide an opportunity to obtain direct feedback from conference participants and identify people interested in becoming involved in shaping the PIN knowledge basket through participation in the review and revision of discussion papers as well as other potential partnerships.

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Background

People benefit from the use of provisioning ecosystem services in terms of food and nutrition, health and medicine, energy, materials and fibres, and clean, safe and available water. At the same time, deep-seated cultural norms, values, identities, and beliefs often underpin this material utility. Such material use is often complemented by symbolic interrelationships with nature that emerge through cultural narratives and ceremony. In the past, household surveys have been used to provide an economic valuation of the contribution of natural resources to household incomes. However, such narrow dollarized assessments do not take into account the contribution of nature to people's well-being and cultural identity. The absence of mechanisms for decisionmakers to systematically consider the material and symbolic roles that nature plays in people's daily lives can result in interventions that damage or destroy critically important species, habitats and ecosystem services.

People in Nature (PIN), formerly known as Human Dependence on Nature (HDN), is a knowledge basket that is being developed to promote learning through a one programme approach to build understanding of the mutually constituting interrelationships of people in nature. It aspires to grow into a comprehensive knowledge basket to improve understanding of the material use and symbolic interrelationships in the lives of people beginning with resource dependent communities. It will create opportunities for exchange amongst existing projects with similar aims to bring together existing approaches and methodologies and identify opportunities to create new ones. The understanding of local material use of, and symbolic interrelationships with, nature will be utilized to inform conservation policy and development interventions to bring about tangible improvements to natural resource dependent livelihoods and well-being.

Origin of PIN Knowledge Basket

At the 2012 Jeju World Conservation Congress IUCN identified the development of a knowledge product that would consider the human dependence of people on nature as a priority within its 2013-2016 programme of work. The development of this knowledge product was to be undertaken using the "One Programme Approach" of IUCN meaning that it would be co-produced by the secretariat, commission members and organisational members of IUCN. This resulted in the formation of a steering group made up of secretariat staff (Nature-based Solutions Group), members of the Commission on Environmental, Economic and Social Policy (CEESP) and representatives of IUCN members. The Theme on Sustainable Livelihoods was identified as the focal point for CEESP with additional representation from the CEESP cross-commission themes of SULi (Species Survival Commission), SPICEH (World Commission on Environmental Law) and TILCEPA (World Commission on Protected Areas). The focal point for the secretariat was identified as the Economic and Social Policy Unit of the Nature-based Solutions Group of IUCN. This steering group hosted a number of workshops during 2013 and 2014 to develop a preliminary concept note to guide the development of the HDN knowledge basket (IUCN 2014) and in which the aim was identified as:

[T]o promote the uptake of existing knowledge and generate new knowledge on the interrelationship between humans and nature, focusing on the use of and reliance on ecosystem services and their contributions to local livelihoods and well-being.

It was further described as a knowledge basket, containing approaches, tools and standards and associated capacity building regarding the interrelationship between people and ecosystems. Through its development and application, it will allow for better data collection, documentation and understanding of local social-ecological contexts that are relevant to policy formulation and development interventions and that result in tangible improvements to livelihoods and well-being.

This paper provides an introduction to the initiative and context for the papers that form part of this panel. In order to do this we provide some discussion on the framing and antecedents of this work and the change in name from the Human Dependence on Nature Knowledge Product to the People in Nature Knowledge Basket. We end by providing some examples of the current case studies being undertaking in this scoping phase of development. We are currently seeking input on discussion papers presented as part of this panel and opportunities for partnerships with people currently undertaking similar work.

Framing the People in Nature Knowledge Basket

The interrelationship between humans and nature is complex, and the interactions people have with nature through appropriation, consumption, exchange and aesthetics intertwine material and symbolic values nested in local perception and cultural processes. Understanding these relationships therefore requires not only use and integration of diverse methods but also understanding multiple knowledge systems and perspectives that cannot be captured under a single epistemology. This reinforces why People in Nature moved to a "knowledge basket" framework rather than a single methodology and "product" approach that would not by itself be able to capture the complexities of the interrelationships between people and nature.

The idea of a knowledge basket emerged during the first workshop held with secretariat, members and commission members to discuss what was then called the Human Dependence on Nature Knowledge Product. In this meeting the CEESP Chair, Dr. Aroha Mead, shared a story about a Maori teaching that conceptualizes three baskets of knowledge. In her perspective, what we were discussing was that knowledge which could be shared with others for the benefit of humanity. It also emphasized that knowledge is not just something that exists in people's heads, or in books, but is created and in our case would be created collaboratively amongst the participants of the initiative. To continue with the basket metaphor, a knowledge basket is something that is woven together by the participants and it is the choices made regarding the materials used and the warp and weft of the weave that will make it both useful and pleasing for those who interact with it. Weaving the basket has required time to discuss key concepts and to take the time to learn from existing project both within IUCN and

those undertaken by IUCN members. It has also included initiating case studies in Costa Rica and Malawi with others in early stages of development. The long term goal is to create a learning space within IUCN that brings together secretariat, IUCN members and commission members to understand material use of nature and symbolic interrelationships. This will include common values and principles to guide the learning process and approaches and methodologies to support members and communities to co-produce knowledge to influence conservation policy and development interventions.

Developing Key Concepts through Discussion Papers

In the first workshop there was also much discussion regarding the term dependence and other approaches and concepts that might provide a more multi-dimensional perspective on material use of nature and symbolic inter-relationships. This led to the development of discussion papers that form the core of this panel related to the following themes: Secondary Data and Use of Nature; Mixed-methodologies; Values and Valuing; and, Livelihoods, Well-being and Poverty. These are accompanied by two other papers not included in this panel related to development pathways and resilience, and governance and rights-based conservation. These papers are currently in a process of review by IUCN members and other interested scholars and practitioners. Along with comments received through this panel and the review process they will be utilized to develop a revised concept note for presentation at the 2016 World Conservation Congress in Hawaii.

Moving from Human Dependence on Nature to People in Nature

The initiative to develop a Human Dependence on Nature Knowledge Product emerged out of previous work by IUCN to highlight the importance of forests to the livelihoods of forest dependent communities. The work of the IUCN forest programme on forest dependence emerged out of discussion with the Center for International Forestry Research (CIFOR) and others interested in providing an evidenced-based approach to document the share of total household income derived from forests. One approach was that of the Poverty and Environment Network (PEN) that undertook a multi-site case study project led by CIFOR (Wunder et al. 2014).

A recent review of this project by Wunder et al. (2014) provides an overview and discussion of key concepts that they utilize including dependence as well as a summary of the precedents of this work. Forest dependence, or more frequently in their recent published work reliance, is calculated as the share of total household income derived from forests (Angelsen et al. 2014, p. S14). To calculate forest dependence it is necessary to calculate total household income through household surveys from all sources of income, including wages, remittances, transfer payments and total environmental income. Total environmental income is that obtained by a household for both purposes of subsistence (i.e. direct use within the household) and trade and would include environmental income from all ecosystems. Subsistence use value is calculated for market price for a specific good, when such a price exists, and proxy values for

those goods without market price. Goods traded can use market price to calculate value. This approach requires that quantity of goods and services can be revealed for each household and while calculated as a yearly value, households are sampled quarterly to reduce recall error. Based on the household surveys, forest environmental income is that obtained from what is defined as a forest and would include cash income obtained from ecotourism activities within the forest, for example, as well as fish from a river that runs through a forest. The share of this forest income in the total household income is a measure of forest dependence or reliance.

In parallel, and subsequent to, this work by PEN on forest dependence, IUCN has run two different approaches to estimate the share of household income from forests. The first, which was developed in parallel to the quantitative approaches of PEN, was the Poverty Forest Toolkit developed as part of the Livelihoods and Landscapes Strategy (LLS). Like PEN, the goal of LLS was to demonstrate the importance of forests to the livelihoods of the poor. Its approach differed by taking a more participatory approach in working with communities to estimate the share of total household income derived from forests using methods from participatory rural appraisal and other participatory methods (IUCN 2012). A project that developed subsequent to these two projects was that of the European Neighbourhood Policy Instrument – Forest Law Enforcement and Governance Programme (ENPI FLEG). This project of IUCN drew upon the methodology of PEN and utilized quantitative village and household surveys to estimate the share of household income derived from forests in seven eastern European countries (www.enpi-fleg.org).

In early work of the Human Dependence on Nature Knowledge Product participants in workshops recognized the importance of this work on dependence but expressed an interest in exploring a more multi-dimensional approach to understand the interrelationships between people and nature. It was also noted that rather than a focus on forests the approach should consider the interrelationships of people with the range of ecosystems that contribute to their livelihoods and well-being. Similar to limitations of the dependence approach recognized by Angelsen et al. (2014) participants also noted a number of limitations. The most significant concern was the use of income as the sole dimension of value. Second, the point-in-time snapshot of household income derived from forests limited the ability of the method to track how use of forest changed over time and the variables that shaped uses over time. While sampling at four times during a vear does allow for understanding of seasonal variation of use, it does not allow for an understanding of longer climatic or economic cycles. Other work on contributions of nature to households, has, for instance, shown that in times of drought or economic hardship people will often turn to non-agricultural ecosystems (Hughes 2009; IUCN) 2013; Muller and Almedom 2008; Turner and Davis 1993). Third, participants expressed an interest in understanding the flow of the species utilized from the range of ecosystem within a landscape, for example, an indigenous community's territory. In part, this was to understand the linkages between conditions of ecosystems that provide species and how endogenous or exogenous drivers/actions would influence the availability and stability of species, ecosystems and landscapes. However, it was noted that this methodology could be adjusted to address these concerns or as the basis to add in other dimensions related to material uses of nature for food and nutrition, health and medicine, energy, artisanal

materials, shelter and water using value metrics (e.g. nutritional value) alongside of economic value. Another concern was that it was less suited to address symbolic interrelationships expressed through cultural narratives and ceremony.

While monetary value does provide a useful metric regarding the use of forest products, it is less suited to understand the cultural dimensions of use related to, for example, identity, status, ceremonial use and the role of nature within cultural narratives and ceremony. It was noted that dependence provides one window on the interrelationship between people and nature. However, using dependence as the sole conceptual frame would not allow for sufficient latitude to explore other metrics of value and cultural dimensions. While the work is still in the early stages of exploring these other metrics and dimensions, these concerns led to a change in name of the knowledge basket and the development of specific modules to allow work to develop with complementary but distinct approaches.

People in Nature as an alternative name emerged out of a workshop held to review progress in South Africa in October of 2015. This followed the solicitation of a new name at a previous workshop in 2014 and a subsequent vote. The name that was initially proposed was People and Nature but a concern was raised with the way by which this reembedded the ontological separation of nature from people and given the goal to include work with Indigenous Peoples would not reflect a holistic understanding of interrelationships of people as part of nature. While this is not fully developed, it has identified the need for a discussion paper to open up this conversation regarding this ontological quandary.

As indicated earlier in our discussion of a knowledge basket, one of the necessary conditions is to allow the knowledge basket to emerge out of a process of learning from previous IUCN approaches, creating conversations amongst those using other approaches and over time convene a community of people interested to deepen our understanding of material use of nature and symbolic interrelationships expressed through narrative and ceremony. This has led to the identification of a number of modules that are currently being developed, allowing for a diversity of approaches to be included in the knowledge basket. Some of these are being applied in early case studies to learn how to apply them in the field with community and partners who work with communities. The modules that have been identified and are currently in development are: Conservation Status of Species and Ecosystem that Contribute to Food and Nutritional Security; Indigenous Lands and Nature (ILAN); Landscape Assessments of Biodiversity-based Systems; and, Forest Dependence.

Early on in the workshops related to the development of the People in Nature knowledge basket it was noted that there is much secondary data regarding the use of biodiversity collected from communities. Often communities are approached to participate in new studies and assessments with little use being made of this existing data. This led to an interest in exploring how we might use secondary data to answer specific questions related to material use of nature by people. It also built upon an interest to explore linkages between People in Nature and existing IUCN knowledge products. As food and nutritional security had been identified as an early domain of work for the knowledge basket an initiative was undertaken to understand if it would be possible to use the Species Information System (SIS) of IUCN and the Red List of Threatened Ecosystems (RLTE) to understand the conservation status of species utilized within the early case study location of Talamanca, Costa Rica (Deutsch et al. 2015a). This initiative undertook a scoping exercise that identified foods important for maternal and child health and then considered the conservation status of these foods drawing upon SIS and RLTE. While challenges were identified in this approach it also determined that there was much potential that could be drawn from secondary data and this continues to be an active module of People in Nature as reported in the paper provided as part of this panel (Deutsch et al. 2015b).

While there has been much discussion about the focus and scope of the work of People in Nature, there was early consensus that given the increase in the lands and waters now stewarded by Indigenous Peoples, there would need to be a module that responded to the needs of Indigenous and Local Peoples. This module will draw upon ideas in the papers of this panel but will be developed in partnership with Indigenous member organizations of IUCN. Early consultations with Indigenous members have reinforced the need to take a multi-dimensional approach to understand material use and symbolic interrelationships expressed through narrative and ceremony. It has been noted that given the importance of processes of decolonization that reengaging interrelationships with lands and waters of Indigenous territories is about healing, authority, ceremony, voice, identity, social justice, new economies and dimensions particular to the historical experience of a People in a place. While these dimensions begin to appear in the work by Suich et al. (2015) and Conner et al. (2015), presented as part of this panel, the steering group has recognized the need to convene a meeting early in 2016 to begin developing a module in partnership with IUCN members both Indigenous and those with deep experience in working respectfully with Indigenous Peoples and Local Communities.

During early workshops one of the concerns expressed about a dependence approach was the focus on quantitative methods. This led to an interest in developing a mixed methodology for understanding biodiversity-based systems and how livelihoods based upon these systems contributed to well-being. In particular, it was noted that given the impact of large-scale development on landscapes, ecosystems and species it was important to develop an approach for assessments that could identify the flow of species from ecosystems and their contribution to household economies and cultural dimensions. The approach to the assessment is rooted in partnerships with local communities and an identified need to understand the distribution of biodiversity values spatially located within the landscape. The workflow that is provided integrates the secondary data module with both quantitative and qualitative methods that can be used to understand multiple dimensions of material use and the symbolic interrelationships with nature through cultural narratives and ceremony. The paper by Idrobo et al. (2015) submitted as part of this panel provides the first iteration of this methodology.

Although concerns were raised with the dependence approach and participants pushed for an approach that would be multi-dimensional, it was recognized that the work on forest dependence should remain as a module within the People in Nature Knowledge Basket. This approach continues to be utilized within IUCN and it has been recognized that partnerships could be built with other agencies that continue to develop this approach.

On-going Development of People in Nature Knowledge Basket

As will be apparent from this short overview of the People in Nature Knowledge Basket, the process is in its formative stages, divergent thinking and dynamic development. At its core is an interest in convening the IUCN community, along with new partners, who share a goal to learn together to better understand the material contribution of nature and the symbolic interrelationships expressed through cultural narratives and ceremony. While much work is currently being done through the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES) at a global level we have decided to begin our work at the level of communities. This is consistent with the input provided by members of CEESP who have stressed the need to develop this knowledge basket in a way that makes it useful for those people working at the community level to express their own perspectives and voices. As a knowledge basket is both a container to hold that which we currently know, and a process of weaving to build new understanding, we invite those interested in the ideas expressed in this panel to share their knowledge and participate in the weaving of People in Nature. We end this short introduction with two vignettes from case studies that ground our reflections in the lived experiences of people in nature. These case studies are representative of the type of projects, people and partners whom we hope to convene allowing for mutually beneficial processes of learning. We provide but two of the strands that are beginning to be woven together as the People in Nature knowledge basket. Similar processes can be found in work currently being undertaken with the Bribri in Costa Rica and amongst Hawaiians who have worked to restore the ahuapa'a system in partnership with Conservation International and The Nature Conservancy. If these vignettes resonate with your own work you may want to be part of this new IUCN initiative.

Anishinaabe People and Manomin

The Anishinaabe are a people of the sub-arctic forests and lakes of North America. They have persisted in living within their territories since time immemorial. Their way of life has consisted of a seasonal round that allowed them to survive and thrive in an environment that some might consider as harsh and resource constrained. One Anishinaabe community persisting within this environment is Wabaseemoong located at the confluence of the Winnipeg and English Rivers in Northwestern Ontario in Canada. Mr. Marvin McDonald recently began a project to restore his relationship and those of his people with Manomin (Wild Rice, *Zizania* sp.) within their traditional territory. For some, wild rice is like any other nutritious food and high value crop; a means of income. Marvin, however, tells a different story. To understand this story some history is necessary.

Like many First Nations in the sub-arctic the 20th Century, Wabaseemoong suffered many impositions on their people, economy, cultural practice, social organization and local environment. These included two hydro-electric dams, one upstream and one downstream of their current settlement, and the release of mercury into their waters from a pulp and paper mill upstream of their main fishing areas. Along with these industrial developments their children were also removed from families and sent to residential schools resulting in a whole generation who no longer were nurtured within their families and traditional territories.

The impacts of these colonial processes have been multidimensional. Hydro-electric dams upset the natural flow of water within the main watersheds of Wabaseemoong, leading to the diminishment of manomin within their territories. Mercury entered into the fish resulting in mercury poisoning of the people with multi-generational health effects. Residential schools broke the interrelationships of kinship within extended families and the land and waters. This history and antecedents make restoring interrelationships with manomin a pathway of decolonization that is also multidimensional. It is ecological, as it requires finding places that manomin can thrive in spite of the industrial developments, allowing people of Wabaseemoong to, as has been said within the community, to "dance the rice anew". It is spiritual, as the act of harvesting restores a relationship with others, both human and other-than-human, through the process of harvesting. It is health, as it makes people aware of why manomin is more nutritious than other grains and provides an opportunity for its consumption. It is political, as people begin to re-establish authority over the manomin fields and their food system. It is cultural, as the process reawakens and brings out of the shadows instrumental knowledge necessary to harvest manomin, cultural values taught during the harvest and in doing so the constitutive process of making cultural identity is re-engaged. And yes, it is economic, as it provides food for people within the community and does allow the possibilities to sell rice to obtain cash income. For Marvin, these aspirations are inseparable and make up the processes necessary to reweave a basket through restoring interrelationships with nature.

Orange Maize in Malawi

Dr. Katundu of Chancellor College of the University of Malawi has, like Marvin, begun a process of restoring interrelationships with a food locally known as *Mthikinya* or more generally as orange maize. His story begins from a chance encounter with a farmer who had continued to produce orange maize in spite of the widespread switch to white maize that was actively promoted in the last twenty years by development programmes. The promotion of white maize was a technological package of hybrid seeds, chemical fertilizers and pest control. Its success, according to Dr. Mangani, can be seen in its replacement of orange maize within the food system of both farmers and urban consumers. Unfortunately, it did not provide the same nutritional benefits as orange maize.

As a human ecologist, and through his work with food scientists such as Dr. Trust Beta, Dr. Katundu was aware that coloured grains provide nutrients important for maternal and child health as well as for the prevention of non-communicable diseases (diabetes,

obesity, hypertension and heart disease). Colour pigments, in a grain, signal the presence of carotenoids, a precursor to micronutrients necessary during pregnancy. Along with these micronutrients orange maize also provides higher protein content and fibre, both of which are important contributions to a diet that reduces the incidence of noncommunicable diseases. While other vegetables and foods harvested from the landscape increase dietary diversity, and likewise provide important micronutrients, it is important to recognize the importance of the main staple, maize. What has been learned through this work is that it is important to consider both the conservation of the farmer varieties that provide higher levels of nutrients as well as the dietary diversity that comes from both agricultural fields and the broader landscape. While the nutritional dimensions is predominant in this work what has also emerged as Dr. Katandu began to work with farmers was the need to gain authority over the reproduction of orange corn and to shift the cultural narrative of traditional foods.

Ecologically, orange maize is also an important source of genetic diversity for adaptation to climate change. Since it is early maturing it provides opportunities to adapt to changes in rainfall patterns. In a country that often suffers from the consequences of droughts, growing a crop that has a higher chance of producing yield when the rain stops early, can significantly contribute to food security.

Currently, farmers are able to reproduce orange maize seed but they are concerned that once corporations realize the advantages of orange maize they will lose the right to their seed. Another challenge to the project is that those who live and work in urban areas have often seen traditional foods as "backward". Along with challenges associated with production Dr. Katandu sees this cultural narrative as an important dimension to shift as it leads people in government to undervalue traditional foods within agricultural and nutritional policy. Orange maize, while providing new economic opportunities for farmers, also has dimensions that are political, nutritional, ecological and cultural.

These are but two of the vignettes of the people who have begun to convene on work as part of the People in Nature Knowledge Baskets.

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