

**Knowledge co-production between science and  
traditional, indigenous and local knowledge  
in global science-policy fora on biodiversity  
(IPBES, CBD)**

**Molnár, Zsolt**  
**botanist, ethno-ecologist**



## **TAKE HOME MESSAGES**

### **Science is not enough for transformative change**

All knowledges of humanity are needed to manage the multi-crisis

'Western' science + indigenous/traditional knowledge

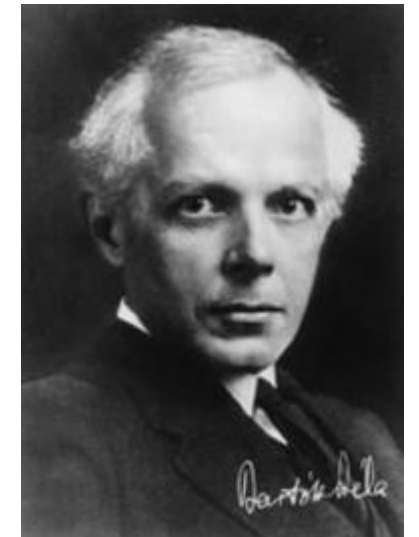
Relevance of knowledge: global vs. local?

### **Added value of looking through different eyes**

More complex holistic understanding of the world

More relevant messages for practitioners and decision makers

# Music based on traditional folk music but merged with classical music



**Béla Bartók**



**Zoltán Kodály**

# The traditional knowledge systems Knowledgeable local land users



**Often neglected, unrespected**



40% of the global land surface  
is grazed



A key moment: turning plant biomass to meat biomass  
(esp. on primary pastures not suitable for crop production)

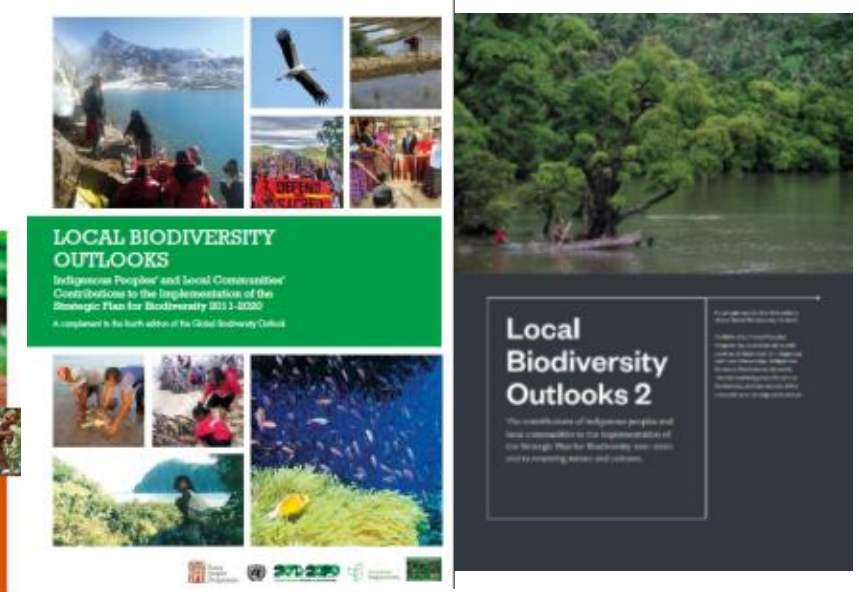


>300 million pastoralists/herders  
<50 scientific papers on this topic  
knowledge gap (utilization / protection)

# Global-scale knowledge co-production between science and traditional knowledge

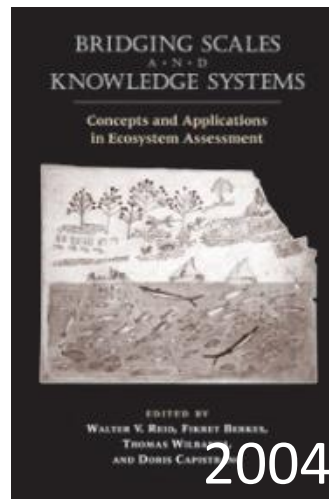
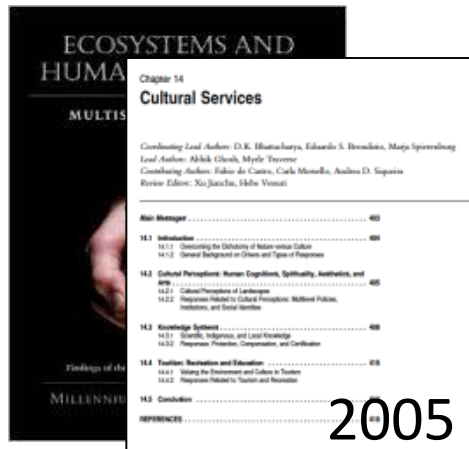
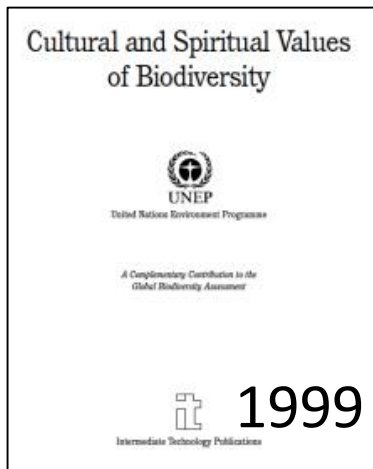
## IPBES Dialogues and assessments

## Convention on Biological Diversity



## Some pre-IPBES efforts

## IPCC is late...



## IPBES Operating Principles

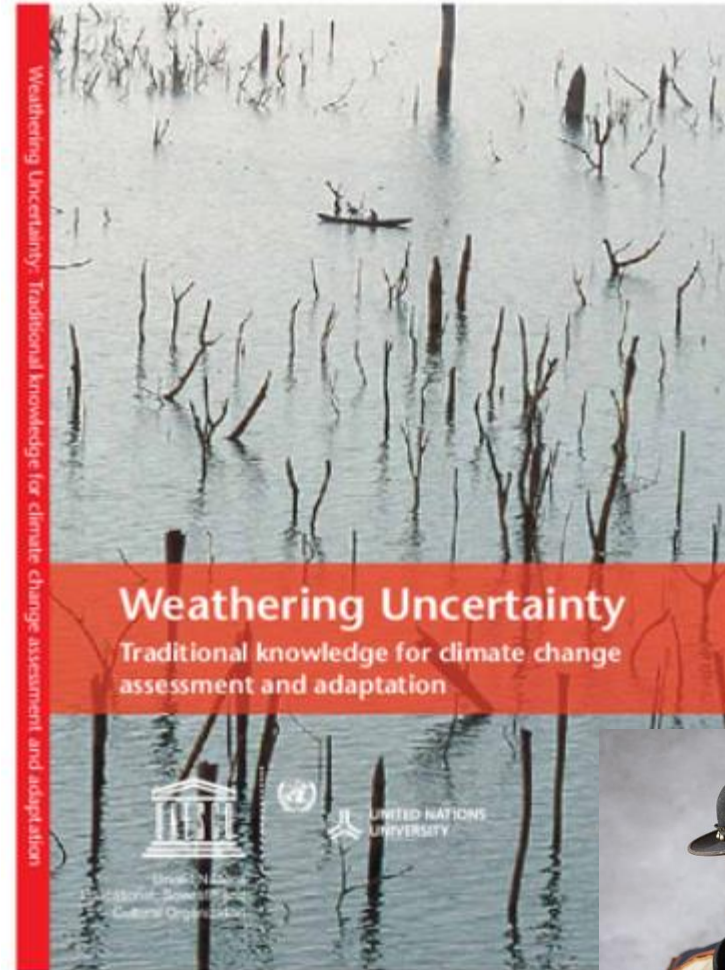
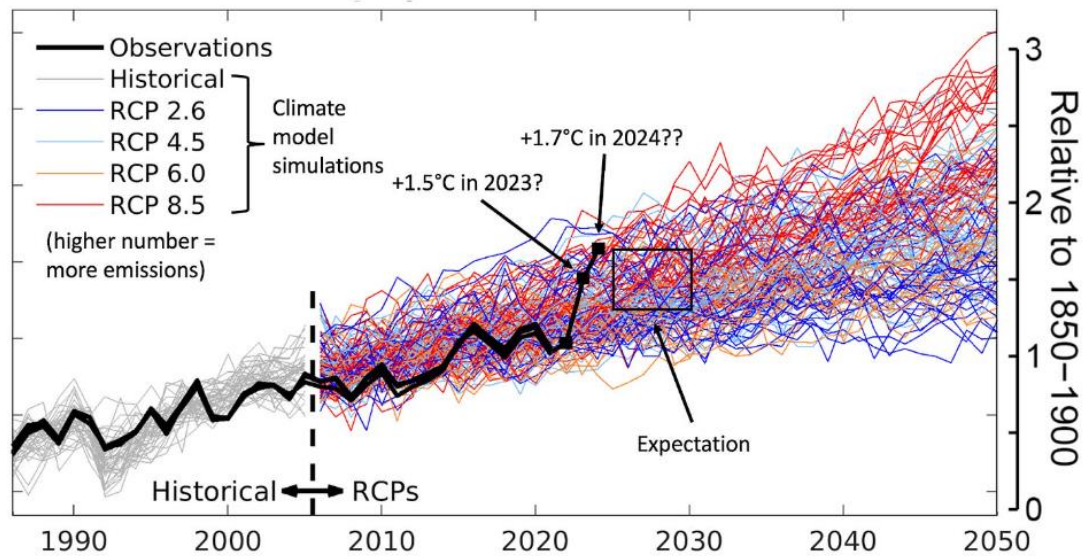
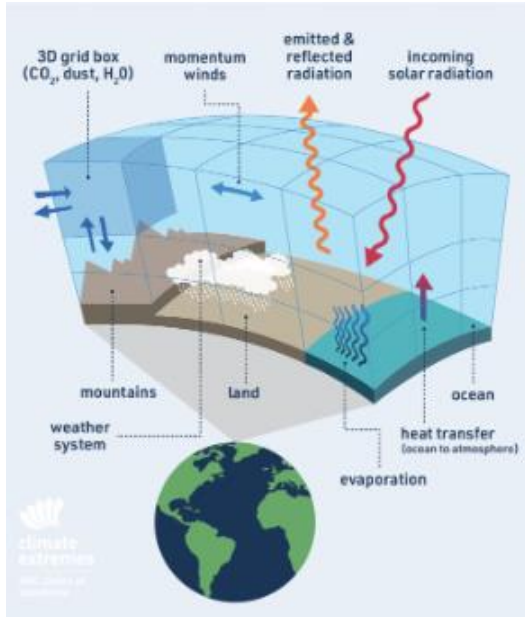
- Take an **interdisciplinary and multidisciplinary (+ transdisciplinary)** approach that incorporates all relevant disciplines
- **Recognize and respect the contribution of indigenous and local knowledge** to the conservation and sustainable use of biodiversity and ecosystems

## Challenges

- **Epistemological** challenges (diverse worldviews)
- **Procedural** challenges (participation of knowledge holders)



# Global climate models vs. local adaptations



2012



Sáfíán László



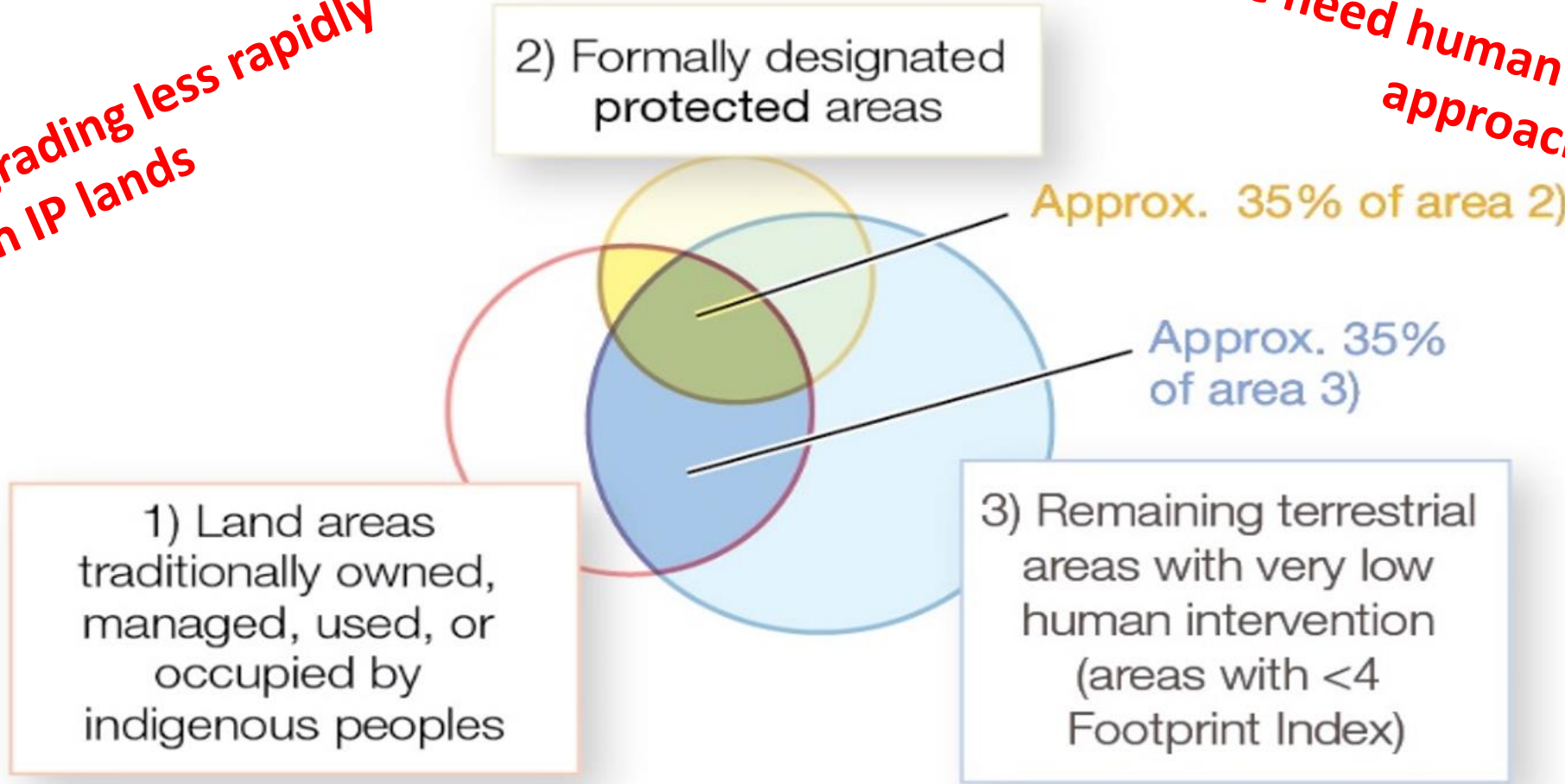
Barta Sándor



# 35-40% of nature protected areas and remaining 'natural' areas are on Indigenous Peoples' lands

*Nature is degrading less rapidly on IP lands*

*We need human rights-based approaches*



# Contributions of Indigenous Peoples and local communities to the protection and conservation of biodiversity

## Domestication, adaptation

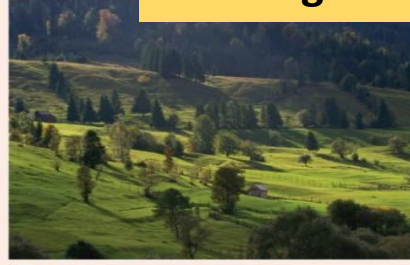


**a** Domesticating and maintaining crops...

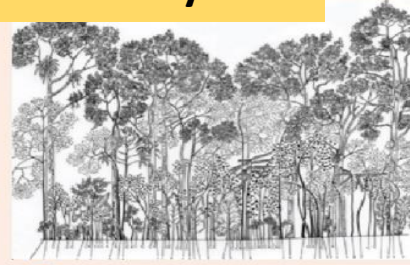


**b** ... and animal breeds

## Creating new rich ecosystems



**c** Creating cultural landscapes with enhanced habitat heterogeneity

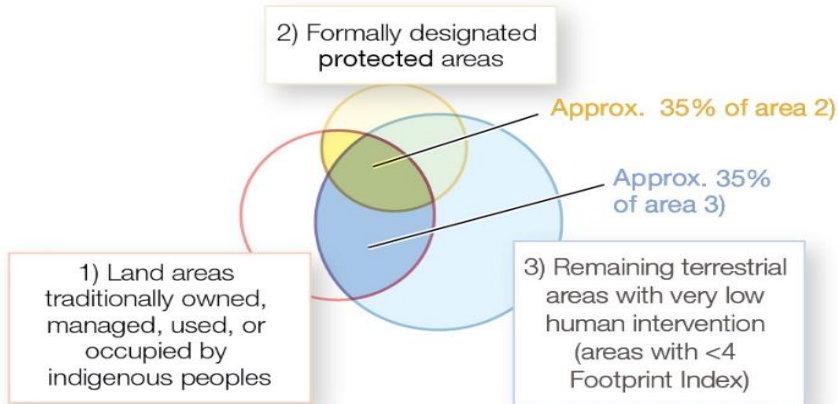


**d** Developing production systems with a multitude of domestic and wild species

## Protection



**h** Preventing forest loss



## Sustainable use, management and monitoring



**e** Habitat management

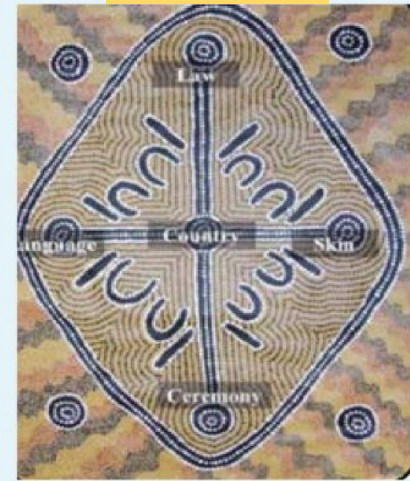


**f** Wild species management



**g** Restoration

## Concepts



**i** Alternative values and worldviews

FAO/Sandiro Cespc  
ion, (e) ©Rebecca B





*Annual Review of Environment and Resources*

Locally Based, Regionally Manifested, and Globally Relevant: Indigenous and Local Knowledge, Values, and Practices for Nature

Eduardo S. Brondízio,<sup>1,2</sup> Yildiz Aumeeruddy-Thomas,<sup>3</sup> Peter Bates,<sup>4</sup> Joji Carino,<sup>5</sup> Álvaro Fernández-Llamazares,<sup>6</sup> Maurizio Farhan Ferrari,<sup>5</sup> Kathleen Galvin,<sup>7</sup> Victoria Reyes-García,<sup>8,9</sup> Pamela McElwee,<sup>10</sup> Zsolt Molnár,<sup>11</sup> Aibek Samakov,<sup>12</sup> and Uttam Babu Shrestha<sup>13</sup>

IPBES (2019) Global Assessment: Summary for policymakers

# Working with Indigenous and local knowledge (ILK) in large-scale ecological assessments: Reviewing the experience of the IPBES Global Assessment

Pamela McElwee<sup>1</sup>  | Álvaro Fernández-Llamazares<sup>2</sup>  | Yildiz Aumeeruddy-Thomas<sup>3</sup> |  
Dániel Babai<sup>4</sup> | Peter Bates<sup>5</sup> | Kathleen Galvin<sup>6</sup>   
Zsolt Molnár<sup>9</sup>  | Hien T. Ngo<sup>10</sup> | Victoria Reyes-C  
Aibek Samakov<sup>14</sup> | Uttam Babu Shrestha<sup>15</sup> | Sand

<sup>1</sup>Department of Human Ecology, Rutgers University, New Brunswick, NJ, USA; <sup>2</sup>Helsinki  
and Environmental Sciences, University of Helsinki, Helsinki, Finland; <sup>3</sup>Center for Functio  
5175, University of Montpellier, CNRS, UPV, IRD, EPHE, Montpellier, France; <sup>4</sup>Institute of  
of Sciences, Budapest, Hungary; <sup>5</sup>IPBES Technical Support Unit for Indigenous and Local  
UNESCO, Paris, France; <sup>6</sup>Department of Anthropology and Geography, Colorado State U  
Programme-World Conservation Monitoring Centre, Cambridge, UK; <sup>8</sup>Center for Systems  
Michigan State University, East Lansing, MI, USA; <sup>9</sup>Centre for Ecological Research, Hunga  
Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), IPBES Secretari  
(ICREA), Barcelona, Spain; <sup>12</sup>Institut de Ciència i Tecnologia Ambientals, Universitat Autò  
of Geography, Clark University, Worcester, MA, USA; <sup>14</sup>Aigine Cultural Research Center, I  
Studies, Kathmandu, Nepal; <sup>18</sup>Instituto Multidisciplinario de Biología Vegetal (IMBIV) and  
Nacional de Córdoba, Córdoba, Argentina and <sup>17</sup>Department of Anthropology, Indiana Un

Tested methodologies  
are available

## Trends in Ecology & Evolution

### Opinion

# Inviting ecologists to delve deeper into traditional ecological knowledge

Zs. Molnár<sup>1,\*</sup> and D. Babai<sup>2</sup>

Ecologists and conservationists increasingly acknowledge that traditional ecological knowledge (TEK) is vital for a better understanding and conservation of biodiversity; for example, for a more complex socioecological understanding of long-term processes, ecosystem resilience, the impacts of traditional management practices, and the worldviews underpinning these practices. To gain a deeper understanding of the ecological dimensions of TEK, ecologists and conservation biologists should conduct participatory long-term collaborative research on TEK. To conduct TEK research properly, however, ecologists need to familiarize themselves more deeply with the methodologies of social sciences, further develop their links with social scientists, and adopt new approaches, such as strengthening respect towards other knowledge systems and being inclusive in research and open to new types of validation.

### Highlights

Ethnobiological and cultural anthropological literature shows that traditional communities living in close interaction with nature (Indigenous communities, traditional farmers, pastoralists, fishers) possess a deep ecological understanding of nature.

Conservationists increasingly acknowledge that traditional ecological knowledge (TEK) is vital for the conservation of biodiversity, especially in cultural landscapes where humans and nature have coevolved over millennia.



ELSEVIER

# Working with Indigenous, local and scientific knowledge in assessments of nature and nature's linkages with people

Rosemary Hill<sup>1</sup>, Çiğdem Adem<sup>2</sup>, Wilfred V Alangui<sup>3</sup>,  
Zsolt Molnár<sup>4</sup>, Yildiz Aumeeruddy-Thomas<sup>5</sup>, Peter Bridgewater<sup>6</sup>,  
Maria Tengö<sup>7</sup>, Randy Thaman<sup>8</sup>, Constant Y Adou Yao<sup>9</sup>,  
Fikret Berkes<sup>10</sup>, Joji Carino<sup>11</sup>, Manuela Carneiro da Cunha<sup>12</sup>,  
Mariteuw C Diaw<sup>13</sup>, Sandra Díaz<sup>14</sup>, Viviana E Figueroa<sup>15</sup>,

Kawa<sup>18</sup>,  
r<sup>21</sup>,  
Oteng Yeboah<sup>24</sup>,  
Perez<sup>27</sup>,  
fer Rubis<sup>30</sup>,



Women's Network on Biodiversity  
rch and Institute of Agriculture and Public Policy Institute,  
Western Australia, Perth, Australia  
s of Washington  
olicy Research, Kumamoto City, Japan  
tion National Museums of Kenya, Nairobi, Kenya  
reen Economy Development, Nepal  
enua Landcare Research, PO Box 69040, Lincoln 7640,

Stockholm Resilience Centre, Stockholm University,  
eden  
or the Promotion of Indigenous Knowledge  
Ghana, Department Plant & Environmental Biology,

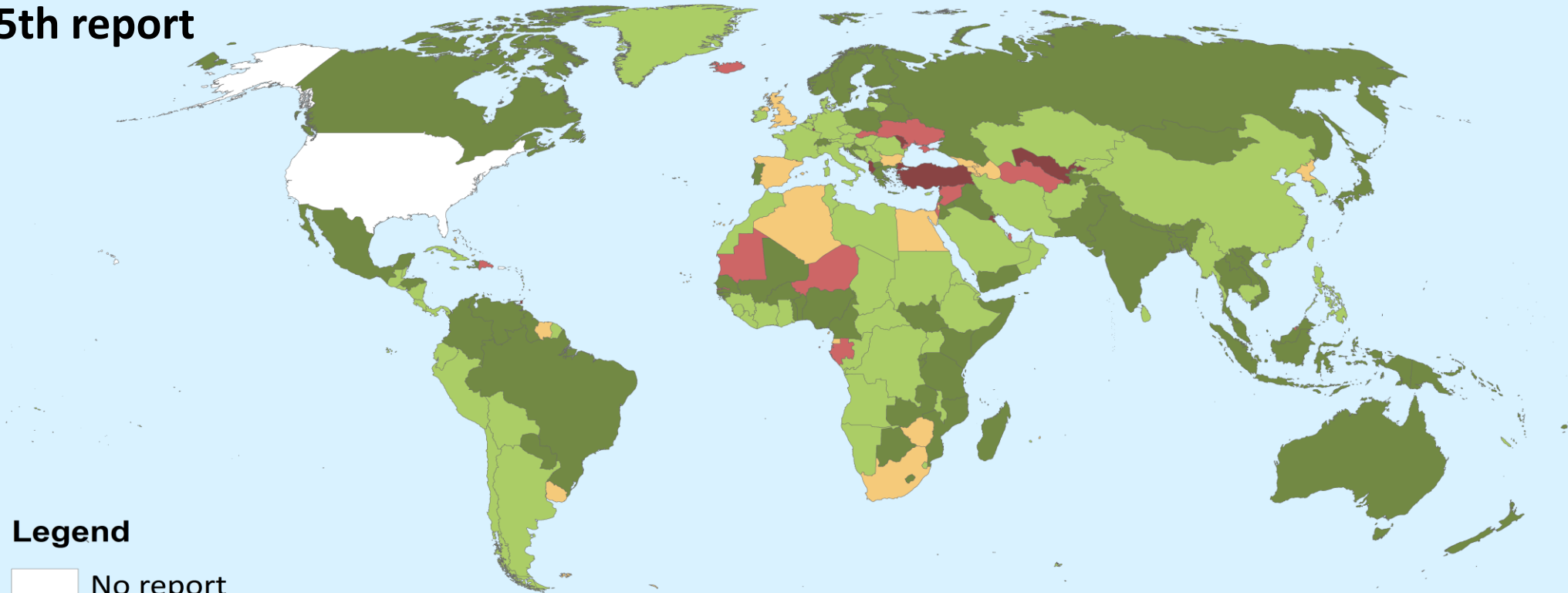
undation, La Paz, Bolivia  
expert, Georgia  
ara el Desarrollo Rural Junej T'inam, Guatemala  
nal de la Recherche Scientifique, MHNH, Paris, France  
sen Fund, 487 Bryant St. 2nd floor, San Francisco, CA  
States

te Fund, Incheon 22004, Republic of Korea  
ns University Institute for the Advanced Study of  
Tokyo, Japan  
and Environmental Science, Minzu University of China,









# Inclusion of traditional/indigenous knowledge of Indigenous Peoples and local communities in the **Convention on Biological Diversity** country reports

5th report

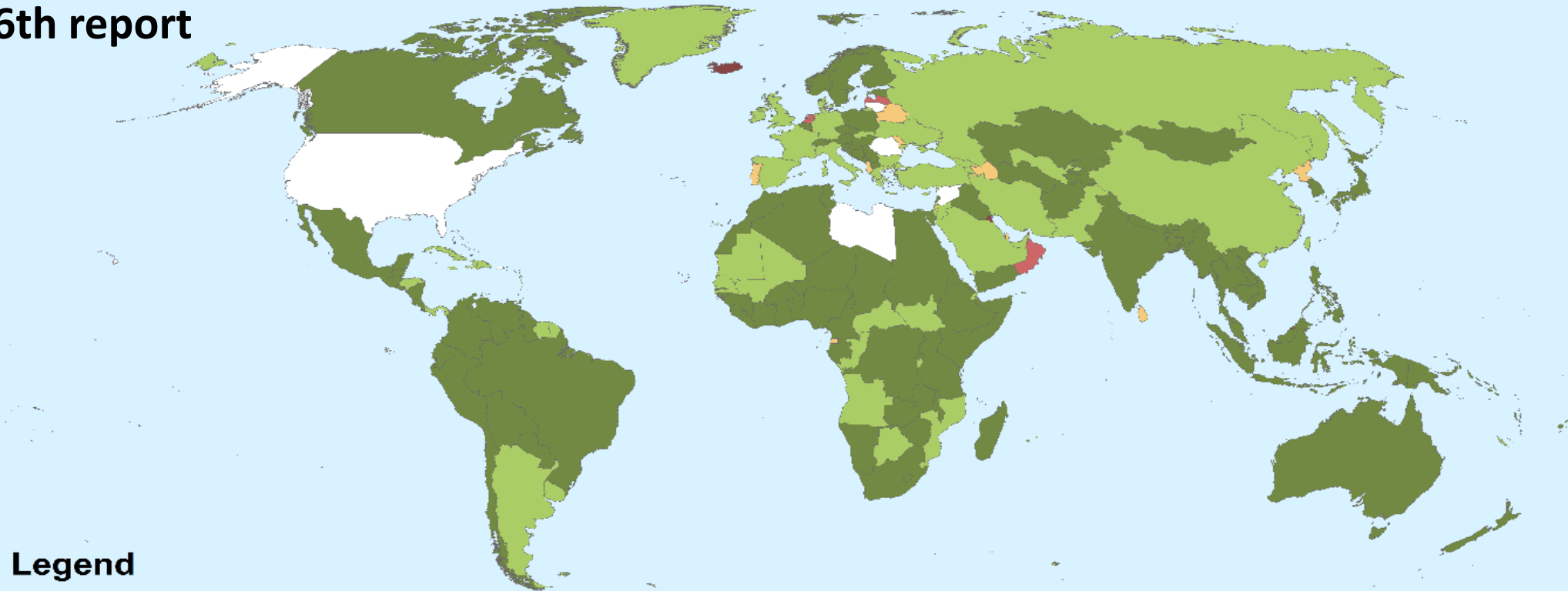


## Legend

-  No report
-  Only in target definition (Aichi Target 14, 18), or in similar phrases
-  Mentioned, with no added information
-  Only medicinal, agricultural (wild species, semi-natural habitats are not mentioned)
-  IK/TK/IP&LC practices are key to wild species, semi-natural habitats (as statement)
-  IK/TK/IP&LC practices are key to wild species, semi-natural habitats (detailed info)

# Inclusion of traditional/indigenous knowledge of Indigenous Peoples and local communities in the **Convention on Biological Diversity** country reports

6th report



## Legend

- No report
- Only in target definition (Aichi Target 14, 18), or in similar phrases
- Mentioned, with no added information
- Only medicinal, agricultural (wild species, semi-natural habitats are not mentioned)
- IK/TK/IP&LC practices are key to wild species, semi-natural habitats (as statement)
- IK/TK/IP&LC practices are key to wild species, semi-natural habitats (detailed info)

## **TAKE HOME MESSAGES**

### **Science is not enough for transformative change**

All knowledges are needed to manage the multi-crisis

'Western' science + indigenous/traditional knowledge

Relevance of knowledge: global vs. local?

### **Added value of looking through different eyes**

More complex holistic understanding of the world

More relevant messages for practitioners and decision makers

