

## WHERE IS GOAL NUMBER 18? THE NEED FOR BIOCULTURAL HERITAGE IN THE SUSTAINABLE DEVELOPMENT GOALS

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### Abstract

On 25 September 2015, the Seventieth Session of the General Assembly in the United Nations approved these new Sustainable Development Goals building upon the vision of the original Millennium Development Goals. I argue that this post-2015 agenda still neglects fundamental qualities of cultural sovereignty key for maintaining sustainable practices, values, and lifestyle habits. No single goal emphasizes the need to protect local ecological knowledge, cultural heritage and alternative economic practices – nor their interrelation with biodiversity – as a pathway to sustainability. The factors that threaten sustainable lifestyles remain a conspicuous absence in the goals. The article presents a thought experiment to provoke the missing piece in the Sustainable Development Goals: The recognition and affirmation of biocultural heritage.

### Keywords

Sustainability – Local Ecological Knowledge – Biocultural Heritage – Human-nature relationship – Sustainable Development Goals



*Where is Goal Number 18?*

*The Need for Biocultural Heritage in the U. N. Sustainable Development Goals*

## I. Introduction: Biocultural Heritage as a Blindspot within the Sustainability Development Goals

The United Nations General Assembly passed a new Resolution on 25 September 2016 entitled ‘Transforming Our World, the 2030 Agenda for Sustainable Development’, as ‘a plan of action for people, planet, and prosperity’ (UN 2015). This new resolution was intended to set revised goals for a sustainable future incorporating lessons learned from the Millennium Development Goals (MDG):

The 17 Sustainable Development Goals and 169 targets which we are announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what they did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. (UN 2015: 1)

These new goals are expansions of the original eight proposed within the larger Millennium Development Framework, and are intended to encapsulate the shortfalls for a more inclusive and sustainable future. Yet, even as the new Sustainable Development Goals (SDGs) seek generalized goals such as the eradication of poverty in ‘all forms, everywhere’ (SDG #1), the discussion fails to articulate the indirect drivers which threaten cultural heritage, linguistic diversity, and traditional ways of life that do not fit into the dominant mode of development in the global economy. The loss of cultural heritage – and respectively the cultural sovereignty of distinct groups – is a major contributor to environmental crises and incidentally, the creation of poverty more generally and these dynamics must be acknowledged as a priority to address (Escobar 2011, IPCC 2015, Maffi 2005, Posey 1996, Hunn 2007). Local communities lose the knowledge and capacity to maintain their communities in sustainable ways when their traditional

ways of life, values, languages and lifestyles are displaced by formal education or economic forces that disrupt ethnobotanical knowledge transmission and practice (Maffi 2001, Rozzi 2013, UNESCO 2010, Zent 2009). The SDGs are missing language that reflects the dynamic interrelation between culture and environment as a co-constitutive unit even as they focus on refining the goals towards sustainability (Díaz et al 2015, IPMG 2015, UCLG 2017, Tengö et al 2017, Maffi 2007).

Notwithstanding, the need to support the deep connection between community and land is applicable for communities living in a diverse range of settings. Colonization of knowledge, livelihoods, and values affects communities living in a diverse range of complex socio-ecologies, including the small island nations, traditional and indigenous communities, as well as farming and agrarian communities in rural and urban settings (AOSIS 2016, UNDRIP 2007, Zent 2009, Dussel 2013, Kahn 2002, Miller 2005, Hunn 1999). While each of these communities face unique difficulties in managing their livelihoods in sustainable ways, they share in common the struggle each community has to maintain their own heritage, ecological knowledge, customs, cultural memory and values in confrontation with dominant hegemonic practices such as monolingual education models or industrial agriculture (Escobar 2011, Maffi and Woodley 2012). The values, cultural memory, and ways of life that is tied and reflected in the places in which communities live can be articulated as ‘biocultural heritage.’ Biocultural heritage represents not only the biogenetic diversity of landscapes, but also the interrelation this diversity shares with the language, heritage, cultural memory, ecological knowledge and values of local and indigenous communities (Argumedo and Pimbert 2008, Davidson-Hunt et al 2012, Gavin et al 2015, Hunn 1999, Maffi and Woodley 2012).

As articulated by Luisa Maffi and others in the emerging biocultural conservation movement, biocultural heritage reflects the diverse ways of being between human communities and their local environments. Whereas biocultural diversity refers to the deep and co-constitutive relation between biological, linguistic and cultural diversity (Rozzi et al 2008, Rozzi 2013), biocultural heritage specifically represents the rich history of language, heritage, cultural memory, ecological knowledge, and values embedded within human culture. I, and others, argue that biocultural heritage should be considered a conceptual unit that should be explicitly articulated as a key component to any sustainability agenda priority (Argumedo and Pimbert

2008, Maffi 2001, Maffi and Woodley 2012, Davidson-Hunt et al 2012, Gavin et al 2015, Andersson et al 2015). The 17 SDGs, complete with their 169 targets, remarkably, do not explicitly articulate the importance of local ecological knowledge and cultural diversity for sustainability as a high-level priority, and these concepts are only referenced in support of goals oriented towards more specific economic development.<sup>1</sup>

As such, a discussion regarding the values underlying sustainable management of non-human resources is a conspicuous absence in these goals. Further still, this absence maintains a status quo that delegitimizes folk practices, traditional ways of life and subsistence economies tied to the land. I argue that this absence perpetuates a blindspot in recognition of the values that are necessary for maintaining sustainable development practices and cultures – even more so – the indirect drivers at work that displace and undermine sustainable communities and local ways of life. That is to say, if the SDG revisions are to account for the shortfalls of the original MDGs, a more explicit recognition of the culture, values, and heritage of the diverse peoples and their relationships to the land must be prioritized in policy language. Further, the key role *local* ecological knowledge and lifestyles plays in maintaining sustainable management practices must be acknowledged, and not remain an afterthought of policy. Without such recognition, stewardship as a praxis or way of life will remain overlooked as fundamental driver of sustainability. Threats to biocultural heritage can be understood as those indirect drivers that erode the knowledge and capacity for human communities to live within ecological limits and can be found throughout contemporary economic and development practices (Pretty et al 2009).

In this article, I propose that the factors contributing to the loss of ecological knowledge and biocultural heritage serve as indirect drivers for unsustainable management practices. Further, that analysis of the factors leading to the deterioration of local ecological knowledge and biocultural heritage reveal important elements necessary for sustainability that are often overlooked within economic and development policies. This discussion is particularly relevant as the newly proposed ‘Sustainable Development Goals’ take root in policy for the 2030 targets. These SDGs have been developed to address the shortcomings identified in the implementation

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<sup>1</sup> The closest iteration present in the SDG is 4.7, which states, ‘...ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others... [the] appreciation of cultural diversity and of culture’s contribution to sustainable development’ (A/RES/701, p. 17).

of the MDGs, and yet continue to follow the same trends discounting the importance of traditional and local ways of life.

The biocultural approach provides a novel lens to discuss the deterioration of local ecological knowledge (LEK), traditional ecological knowledge (TEK) and the consequences sustainable development policy and practices impact ecological knowledge and values across the rural-urban gradient (Rozzi et al 2006, Zent 2009, Rozzi et al 2015, Krauss 1992). I will present the concept of biocultural heritage to articulate a sustainable relationship that is possible between humans and the world around them, including the LEK, TEK, and cultural heritages that form such a relationship. Unless explicitly identified as an entity prioritized for its own merits, threats to cultural diversity and alternative forms of economies will remain a blindspot in development discourse, which are further eroded as communities are displaced from their lands or lose their ways of life through the impacts of climate change, the loss of biodiversity, the loss of native languages and displacements of communities (Agyeman 2005, Argumedo et al 2011, Argumedo and Pimbert 2008, Berkes 2000, Nazarea 1999). Such an analysis ultimately points to the need for the additional Sustainable Development Goal #18, to ‘Protect, promote, and engage biocultural heritage to reinforce and support sustainable interconnections between diverse human societies and their distinct environments.’ The co-evolutionary and ecological link between biological, cultural and linguistic diversity is currently absent within the development model, revealing the accumulative biocultural heritage of the Earth’s peoples to be a blindspot in the SDGs.

## II. Background: The Millennium Ecosystem Assessment Framework

In 2000, UN Secretary General Kofi Annan called for the scientific evaluation of the world ecosystems and the services they provide for humanity in response to the recognized need for research on human well-being in relation to ecosystem health, or rather, ‘a major international collaborative effort to map the health of our planet’ (MA 2004: 1–2). As an international effort involving scientists, anthropologists, ethicists, economists, policy-makers, and many more, the Millennium Ecosystem Assessment Framework (MA) was presented in 2003, identifying direct and indirect drivers that impact ecological functioning and their

consequent ability to provide ecosystems services for human well-being to meet the MDGs (MA 2005).

This framework largely popularized the ‘ecosystem services’ (ES) model, by clarifying the services or benefits humanity receives from the natural world. This model has now taken root as of a form of environmental outreach and education, providing language to articulate the services provided by the ecosystems of the world. More generally, the ecosystem services approach has been controversial as it was an attempt to provide an economic evaluation of intangible values within the global market (Costanza 2014). Despite the inherent difficulty in capturing the economic value of existence value or ‘value-for-its-own-sake’ this approach has also provided a tool to discuss the services humanity receives from the world’s ecosystems, and continues to be used in policy, education and environmental discourse (Liu et al 2010, Liu 2010, Schröter 2014). To address these criticisms of the ES approach, the framework has been adjusted by the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) to explicitly articulate not only the instrumental value of ecological services but also the intrinsic and relational values that nature poses to different communities within decision-making (Pascual et al 2017).

Often overlooked within the discussion and utilization of this model as an educational tool, however, is that the MA utilizes an important concept for driving forces to identify causal agents of change in the human development of the environment. *Direct* drivers are those agents of change that are physical or mechanical processes, whereas *indirect* drivers are those agents of change that are intentional and socially related (Nelson 2006). The indirect driver language in particular can be used to identify human-driven or anthropogenic drivers of change, which often receive the misnomer of being unnatural or inherently destructive to ecosystem functioning even though many anthropogenic behaviors are sustainable. The way in which indirect and direct drivers interact can form iterative or unintended effects, making it difficult to predict outcomes, yet the capacity to predict and therefore manage for intended outcomes remains a pressing need for human and ecological well-being (Clark et al 2001, Nelson 2006, Díaz et al. 2015). Indirect drivers, ranging from patterns of consumption and production within the global economy, sociopolitical context, cultural and religious values, and technoscientific innovations are much less explicitly acknowledged than their direct or biophysical counterparts driving global

environmental change (Nelson 2006). Understanding the interlinked dynamics between social and material causes is a complex task that is often left to the humanities or social sciences, remaining isolated from causal discussions regarding management decisions of the physical sciences.

Carpenter et al. (2006, 2009) have argued that focusing on indirect drivers, or linking the causal relationship between social values, policies and lifestyles, with biophysical or environmental processes remains a pressing research need in the process of linking social to ecosystem change as:

Most research related to ecosystem services focuses on direct drivers, such as land use change or invasive species. Yet, effective management requires more attention to indirect drivers such as demographic, economic, sociopolitical, and cultural factors (Carpenter 2006).

Analysis of these indirect drivers is a particular strategy for analyzing human-nature dynamics as these indirect drivers create or ‘drive’ the conditions that shape the world, and this relation remains a neglected area of research (Loh 2005, Maffi 2007, Díaz et al. 2015).<sup>2</sup> There is a general trend to incorporate ‘socio-cultural phenomena’ into management policy and frameworks to recognize distinct epistemologies and utilize a pluralistic approach to understanding value systems (Fish et al. 2016; Raymond et al. 2017; Van Riper et al. 2017). These frameworks share in common arguments for the inclusion of plural value and knowledge systems that reflect the distinct dynamic engagements of unique communities with their changing environments. The biocultural approach provides an articulation of the co-constitutive interrelation between biological and cultural diversity, and specifically articulates the legitimacy

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<sup>2</sup> In this vein, many have argued that a fourth pillar is needed in sustainable development to incorporate the intangible nature of ethical values along cultural-aesthetic, religious-spiritual, or political-institutional axes. This fourth pillar has been described as a need for ‘culturally sensitive’ models within policy to capture the inter-subjective or contextual nature of the ongoing engagement of human communities with their environments (Duxbury et al 2012, UCLG 2010). Burford et al (2016) argue for an explicit conceptual articulation of the ethical values which undergird sustainable goals. The biocultural approach is certainly commensurate with the prioritization of value-based indicators but with emphasis on forces to protect and create conditions in which cultural, linguistic and biological diversity interface in both tangible and intangible ways.

of local and traditional ecological knowledge systems and the important role situated knowledge plays in forming engaged and self-determining communities when it comes to land management practices.

Interdisciplinary approaches for analyzing indirect drivers are necessary to incorporate the dynamic interrelationship between culture and nature into sustainable development models (Díaz et al. 2015, Van Riper et al 2017, Wolverton 2013, Rozzi et al 2013). I call attention to the high relevance of the indirect drivers for sustainable development policies because, whether explicitly acknowledged or not, indirect drivers represent influential structures linking life habits and the habitats of the urban habitat.<sup>3</sup> These indirect drivers in turn shape communication, policies, and administration priorities, comprising the environmental context in which an individual participates, engages, senses, and perceives the world. And in the case of ecological knowledge and cultural heritage, the fundamental experiences that shape values, priorities, and knowledge of the natural world and the human relationship and interdependence with the natural world. I propose that this results in a collective loss and depreciation of biocultural heritage, further hindering efforts within sustainable development to articulate barriers to its existence.

One of the common erroneous assumptions about culture that often limits discussion of ecological knowledge and values is the belief that human culture is fixed and that urban communities lack any significant ecological heritage. Berkes et al. argued that ‘[some] traditional systems had certain similarities to adaptive management with its emphasis on feedback learning, and its treatment of uncertainty and unpredictability intrinsic to all ecosystems’ (Berkes 2010, p. 1251). Describing traditional knowledge as a ‘knowledge-practice-belief complex’, Berkes highlights an important interconnection between knowledge of the world and the management practices we have with it—and that is the role that long-term memory, culture, and practiced knowledge(s) have in our engagement with the environment. This concept may point us in the direction of sustainable development,<sup>4</sup> but more importantly, it may also highlight the relationship to the environment that is missing for those who experience an ‘extinction of experience’ either culturally, environmentally, or even from the absence of an awareness of the

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<sup>3</sup> Ricardo Rozzi emphasizes the biocultural ethic at the heart of this intersection among the reciprocal links of habits-inhabitants-habitats (Rozzi 2013).

<sup>4</sup> While many definitions of sustainable development persist, the UN documents tend to follow the definition originally proposed in the Brundtland report, ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (UNGA 1987).

interrelation.<sup>5</sup> The working definition Berkes provides for traditional ecological knowledge, which also highlights the interrelation or awareness of day-to-day life with environment, is ‘a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment’ (Berkes 2010, p. 1252).

In turn, local ecological knowledge can be considered any situated body of knowledge that reflects knowledge of the local environment and management practices.<sup>6</sup> While traditional ecological knowledge is recognized as a vital part of indigenous knowledge (UNDRIP 2007), Michelle Cocks argues that local ecological knowledge is actually a fundamental aspect of all cultures (2006). She argues that the tendency to overlook local ecological knowledge in urban or non-traditional communities is a result of cultures that do not explicitly acknowledge the human–nature relationship within their fundamental values (Cocks 2006). Considering this, Cocks proposes the explicit application of the concept of biocultural diversity should be applied to urban and rural groups that do not fit into the categories of indigenous peoples to emphasize that the biocultural link is a very real part of the human–nature relationship, and that it is present in communities that may not even recognize this co-evolutionary relationship. The implications of such critiques is that knowledge itself contains an ethnobotanical interrelation, or that is to say, carries within it some form of dynamic ecological knowledge. Further, that any educational or formal institution that discounts the importance of local ecological knowledge is undermining cultural integrity and heritage or the sovereignty of those local ecological knowledges. And so, we can acknowledge that communities share in a local or situated culture, regardless of the degree to which the intergenerational transmission of knowledge and ecological knowledge has been disrupted. The implication opens wide the need to analyze dominant global practices within

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<sup>5</sup> Robert Michael Pyle (1993) introduced the term ‘extinction of experience’ to refer to the ongoing cycle between decreased environmental experiences and the loss of local ecological knowledge. This term has been taken up by a range of perspectives to articulate this loss within conservation biology and biocultural studies for communities throughout the urban-rural gradient. See Maffi’s introduction to the edited volume, *On Biocultural Diversity* (2001), Miller (2005), Nabhan & St. Antoine (1993), Poole (2015), Samways (2007).

<sup>6</sup> TEK and LEK remain controversial terms receiving much scrutiny out of concern of treating culture as ‘dead’ or unchanging and essentializing particular community with unique ideal attributes (Maffi 2012). See discussion on some of the controversy surrounding the nomenclature ‘traditional ecological knowledge’ in the editorial by Felice S. Wyndham, ‘The Trouble With TEK’ *Ethnobiology Letters*, Vol 8. Issue 1 (2017) or Maffi’s. For a thoughtful discussion on the tensions replete in this discourse, see: Anna Grear, ‘The Discourse of ‘Biocultural’ Rights and the Search for New Epistemic Parameters: Moving Beyond Essentialisms and Old Certainties in an Age of Anthropocene Complexity. *Journal of Human Rights and the Environment* Editorial Vol. 6, Issue 1 (2015).

education, economy and agriculture to evaluate ways that they affirm or undermine local biocultural heritage and cultural relation to place, as well as ways to redress this trend. Further, it highlights a need to recover ecological knowledge and valuing of ecosystem services more generally in communities that are removed from nature (Díaz 2015, Loh 2005, Andersson et al 2015, Maffi 2012, Miller 2005, Samways 2007, Tengö et al. 2017).

Drivers have the potential to shape human activities and steer society towards certain goals. Therefore, developing understanding of the social-ecological dynamics and infrastructural forces underlying sustainable societies must be at the forefront in the development of new structures for sustainable living in the twenty-first century. I propose that biocultural heritage, local ecological knowledge, and local management practices remain some of these indirect drivers, and there remain many more such forces at work within the space between ethical and cultural values and the structures that shape human society and action. As long as the loss of local ecological knowledge and biocultural heritage is not recognized as a driver of ecosystem change, policy will remain at a disadvantage to address it as a threat to sustainability. A further step must be taken to address a biocultural mode of thinking within the larger SDGs, and the forces that threaten or undermine these ways of being. This next section will provide an analysis of the MDGs and SDGs with key moments where local ecological knowledge and biocultural heritage are overlooked in significant ways.

### III. The Sustainable Development Goals and the Inclusivity Clause

Globally, there has been a concerted effort to address human well-being while responding to the environmental crisis. However, these efforts are typically centered on economic prosperity and growth, and measured through economic vitality and do not typically include consideration of threats to biocultural heritage (local ecological knowledge, ways of life, and cultural heritage). One can see this tendency demonstrated quite clearly in the phrasing of eight major priorities articulated by the United Nations in the 2000 Millennium Development Goals (MDGs). These goals served as guiding practices towards the larger project of ensuring social well-being at the global scale (listed in Table 1).

Table 1: 2000 Millennium Development Goals

1. Eradicate Extreme Poverty and Hunger
2. Achieve Universal Primary Education
3. Promote Gender Equality and Empower Women
4. Reduce Child Mortality
5. Improve Maternal Health
6. Combat HIV/AIDS, Malaria, and Other Diseases
7. Ensure Environmental Sustainability
8. Global Partnership for Development

These eight goals include eradicating extreme poverty and hunger, achieving universal primary education, ensuring environmental sustainability, and furthering a global partnership for development. Yet note the deep interrelation between cultural and biological diversity is absent, further, none of the goals specify ways of life that would not fall into the dominant development model prevalent in the global economy today. Each of the eight goals emphasize general conceptions of social-well being that are dependent upon economic indices. While these are important factors for evaluating the health of a community, they do not tell the full story. In the Indigenous People's Major Group Policy Brief on Sustainable Development Goals and Post-2015 Development Agenda, the working draft proposed that the SDG revisions will, 'present a unique opportunity to not only remedy shortcomings of the MDG process, but also historic injustices resulting from racism, discrimination, and inequalities long suffered by indigenous peoples around the world' (Indigenous People's Policy Brief, 2015, p1).<sup>7</sup> One proposed target to affirm this lacking was a proposed target for Goal 16:

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<sup>7</sup> See also UNDRIP or Posey and Dutfield (1996) on intellectual property rights and sovereignty for traditional or local communities.

Target within Goal 16: Recognition of legal plurality and customary laws of indigenous peoples and access of indigenous peoples to redress mechanisms. Indicators: 1) Capacity building for legal practitioners customary laws, 2) number of governments recognizing customary laws (Ibid, p. 11).

These and other recommendations point to ways in which, ‘culturally-sensitive approach[es] that emphasizes universality, participation and accountability, and which is based on respect for and inclusion of our worldviews and perspectives and experiences in the SDGs’ is not explicitly emphasized in the policy language, what one might articulate in terms of the important role of ‘cultural diversity in sustainable development’ (IPMG, March 2014,). As stated by this proposal and many other critiques of the MA, these eight principles overlook a deep and fundamental relationship to the land that many cultures hold key to their understanding of socio-ecological well-being.

A fifteen-year target was set for addressing these goals as a response to the environmental crisis and the perceived threats to human well-being. It was the experience learned from implementing these goals that guided the 2015 revisions of the SDGs. One aspect of development discourse that has gained particular traction in recent years is the need to address the socio-political injustices that result from disruptive development practices as an ethical priority. While these revisions are important, as is the expansion of the goals to include another eight priorities, there is a pattern of oversight that remains present: the role of cultural diversity in sustainable development, that is to say, the specific sovereignty of local communities over their lands, cultures, languages, ways of life, and economies.

Reports have shown some improvement in the eight concentrations proposed in the MDGs, according to the indicators used by the assessment. The 2012 UN MDG Report showed that

... the proportion of people living on less than \$1.25 per day has decreased from 47% in 1990 to 24% in 2008 (from 2 to 1.4 billion). This indicates that Target 1 – Halve the proportion of people living on less than one dollar a day – will be reached by 2015. Child mortality... has been steadily decreasing globally, and immuni[z]ation rates are over 90%

in almost two-thirds of all countries (Overseas Development Institute [ODI], 2010). Enrollment rates of primary schools increased from 58 to 76% in sub-Saharan Africa between 1999 and 2010, professional assistance during childbirth has improved from 55% in 1990 to 65% in 2010 (Indicator 5.2) and the aimed reduction of slum dwellers by 100 million (Target 7.D) is already achieved. (Fehling 2013)

Even as reductions occurred in the areas above, I concur with MDG critics who emphasize that in many ways the development goals do not manage to stem the impact of large-scale economies on local communities as these goals did not address the underlying causes of displacement, overexploitation, and poverty. For instance, ‘development aid has fallen for the first time in more than a decade’ despite Goal 8 to create a better ‘global partnership for development.’ Even if this decrease in aid had not occurred, global partnership requires more than aid for the impoverished, it requires addressing the conditions that create poverty, loss of culture, and self-determination.

Admittedly, the earlier formulation of the MA was not consistent throughout its evaluation because it is a large body of work representing research from multiple social and ecological sciences. For instance, the chapter on social values runs in tension with the chapter on poverty, the former emphasizing cultural sovereignty and the latter overlooking the role that large-scale development plays in displacing peoples and violating that local sovereignty. This unevenness in emphasis should be corrected in order to address the loss of local ecological knowledge, or in the least, noted as an ongoing tension within discourse surrounding the environmental crisis and urban sustainability. The difficulty in providing consistency on environmental knowledge within policy provides further support for the inclusion of an overarching SDG that specifically identifies biocultural heritage or the deep interrelation between biological and cultural diversity as a specific goal for sustainability.

And so, following Rio+20, an open working group was put together to develop new Sustainable Development Goals, to update and adapt the MDGs for a post-2015 development agenda. In September 2015, a global vote approved these new sustainable goals building upon

the original vision.<sup>8</sup> While the proposed expansion of the original development goals include more explicit considerations of social and economic justice as well as an emphasis on building sustainable practices and societies, the analysis of the forces that create *unsustainability* as a culture is little developed in the policy language. Further, the factors that threaten local ecological knowledge, traditional lifestyles, and alternative economic practices still remain absent and are not explicitly listed in the seventeen new goals (listed in Table 2). The proposed sustainability goals are intended to be revisions of the MDGs to account for the shortfalls found in the past fifteen years. Note that no single goal emphasizes the need to protect local ecological knowledge, cultural heritage, nor its interrelation with biodiversity as a pathway to sustainability.

Table 2: 2015 Sustainable Development Goals (emphasis added)

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure *inclusive* and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, *inclusive* and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote *inclusive* and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements *inclusive*, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns

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<sup>8</sup> The Working Group progress is available online: See, ‘Sustainable Development: Knowledge Platform’, <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>. Last accessed: June 20, 2015.

13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and *inclusive* societies for sustainable development, provide access to justice for all and build effective, accountable and *inclusive* institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

The indirect drivers of unsustainable development is overlooked in these goals, falling short of the very conceptual revisions that are necessary to address the original shortcomings of the MDGs. For instance, MDG #1 has been expanded from its original formulation, ‘Eradicate Extreme Poverty and Hunger’ to SDG#1, ‘End poverty in all its forms everywhere.’ The subsequent targets do not identify tribal or rural displacement as a major driver in impoverishment of communities, nor the factors that offer lead to the creation of informal settlements, urban food deserts, or other forms of environmental injustices such as those found in Flint, Michigan, United States, with the population largely being exposed to lead in water system due to a failing infrastructure. This language overlooks the significant role that development has played, and continues to play, in the creation of poverty that continues throughout the globe.

Poverty is caused by many factors, and the disregard for these causes and their relation to the dominant economy ignores its significance for cultural sovereignty and its implications for earth stewardship. Local peoples are often displaced from their land by industry, impacts of climate change, or loss of local economies, leading to mass rural migrations to urban cities. These displaced communities then go on to form shantytowns at the outskirts of large urban centers, unsupported by the larger infrastructure of the city and disconnected from their traditional livelihoods. This pattern is taking place at unprecedented rates today in regions of Africa, Asia, Central and South America (Rozzi 2015). Large-scale development degrades local

ecosystems and displaces local peoples, leading to a break in cultural heritage and ecological place, a disruption that is both environmental and cultural.

The March 2014 Indigenous People’s Working Group working on the SDGs specifically set the primary targets to eradicate poverty to include the following:

Table 3: Targets for Goal 1 from Indigenous People’s Working Group
Goal 1: Eradicate poverty for Indigenous Peoples
1.1. Secure Indigenous People’s collective rights to land, territories, and resources
1.2. Protect local and diverse Indigenous Peoples’ economies and livelihoods, traditional subsistence activities and food sovereignty
1.3. Ensure equal and access for Indigenous peoples’ economies and livelihoods, traditional subsistence activities and food sovereignty (p. 2, IPMG 2014)

This nexus of the right to land, territory, and resources is embedded in the deep relationship that indigenous people way of life, culture, and production of food depends upon the land. To either take away access to this land, or to displace such peoples, is to essentially cut the people from their ability to provide for themselves, or as one might say in the language of sustainability, the capacity for these peoples to provide for themselves and future generations of their own community.

Alleviating poverty requires avoiding the original displacement and impoverishment of these peoples, rather than simply addressing their needs once they have been displaced from their homelands and traditional ways of life. A landmark decision protecting the right of ancestral peoples to maintain their lands occurred with 1993 Law of Colombia, ‘In Recognition of the Right of Black Colombians to Collectivity Own and Occupy their Ancestral Lands.’ In this case, Afro-Colombians of the South-Pacific were facing displacement due to growing economic

pressures (Escobar 2011). To protect their way of life and livelihoods, Law 70 of Colombia put forth in Article 3 as the following guiding principles:

Table 4: Law 70 of Colombia, Chapter 2 II, Article 3

Article 3: The present Law is based on the following principles:

- Recognition and protection of ethnic and cultural diversity, and equal rights for all cultures that compose the Colombian nationality
- Respect for the integrity and dignity of the Black Communities' cultural life
- Participation of the Black Communities and their organizations, without detriment to their autonomy, in decisions that affect them and in those that affect the entire nation in conformity with the law
- The protection of the environment, emphasizing the relationships established by the Black Communities and nature (p. 3, Law 70, 2007)

Indeed, it seems reasonable to expect similar language within the MDGs and SDGs. Yet MDG #1 and its SDG adaptation do not explicitly acknowledge the underlying causes of poverty. Indeed, if policy were to 'eradicate extreme poverty and hunger' we should equally expect to see a goal that read 'preserve the sovereignty of local peoples to their land, heritage, and property', as stated in Law 70 of Colombia. Instead, the SDG perpetuates the same theme underscoring development discourse – if not exacerbating this trend – by setting the new goal which only generalizes these principles more by reframing the goal to 'end poverty in all forms everywhere' (SDG #1) without addressing its ultimate causes. This presentation does not recognize that displacing local peoples from their own lands is a major driver of poverty, nor that threatens to the health of the land on which they live, their ways of life, undermining their capacity to continue living with the land, let alone sustainably. In both proposals, the Indigenous

People's Working Group recommendations and the Law 70 of Colombia, the indirect drivers would specifically protect local ways of life, cultural sovereignty and local ecological knowledge are addressed. Similar adaptations could be made either throughout the SDGs, or as a more general principle within the goals. Protecting heritage and sustainable lifestyles is as important as developing new strategies for adapting current development practices towards sustainability. However, in order to prevent the continued displacement of local peoples, the causes or drivers of poverty must be acknowledged and addressed. In sharp contrast to the idea of 'partnership' (see SDG Goal #17), large-scale development often displaces or undermines local ways of life that are already self-sustaining in a way that framing in terms of partnership will not address. This tendency to talk about current states of impoverishment or loss, without addressing the underlying causes, remains throughout the newly revised SDGs, and as such, these terms remain a framing that continues to obfuscate the impact of dominant development practices on local communities.

A poignant example of the tendency to overlook cultures that have a close relationship with their land is present in the use of 'inclusivity' throughout the language of the SDG regarding subsistence economies and education. For instance, the educational model underlying SDG Goal #3, 'Ensure inclusive and quality education for all and improve lifelong learning', expands on MDG's goal to 'achieve universal primary education' without affirming the need to provide space for traditional knowledge systems and traditional educational practices within the formal classroom. Goal #3 does not explicitly recognize other educational methods within traditional and indigenous communities. This educational model does not account for the nuanced and complex traditional knowledge of communities, thereby discounting local ways of life and further separating knowledge relevant to local landscapes (Zent 2009). Knowledge transmission occurs in important ways in nonformal educational settings, including traditional stories, learning from the grandmothers, and following parents on their daily routine. Formal education as practiced today not only does not acknowledge these forms of learning, instead excluding and displacing these ways of knowing as being legitimate. The lack of recognition for local forms of knowledge and transmission perpetuates the displacement of local ways of life and knowing, ultimately continuing the trend to undermine subsistence ways of life. This reveals the significant urgency that policy address local ecological knowledge, knowledge transmission, and traditional lifestyle practices more explicitly within the SDGs, especially in its post-Rio iteration.

These and other examples show that the SDGs appear to be continuing the trend of the MDGs in overlooking the important role of local ecological knowledge and biocultural heritage in managing socio-ecosystems and maintaining community engagement with environmental management. The listed SDG goals do not explicitly specify the importance of linguistic losses, disruption of the oral tradition, fragmentation of communities, or others forms of displacement and general disregard for local ways of life. Addressing these indirect drivers is a significant step in addressing the forces that create cultures of unsustainability which have been created in the post-industrial society. It is also a political issue facing urban communities who face pressing economic and political pressures driving unsustainable ways of life.

This is commensurate with the proposed conceptual framework of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) which is designed to provide analytical tools to add the ‘co-construction of integrative knowledge’ of diverse knowledge systems to policy considerations (Díaz 2015, p. 1). The conceptual models following the MA are already reflecting a deeper understanding of the roles that values play in decision-making, and the tendency to overlook the deep co-constitutive quality and inextricable link underlying nature and culture. Explicating this interrelation with specific articulations is necessary as part of a larger paradigm shift that must percolate the legacy of top-down policy trends which have historically discounted the significance of these interrelations and the colonization of local knowledge systems and cultures. For example, the United Cities and Local Governments (UCLG) Committee on Culture has developed a petition to amend the SDGs to explicitly identify the role of culture in developing sustainable practices as a fourth pillar within sustainability frameworks. In the petition, ‘Recognizing the Role of Culture to Strengthen the UN Post-2015 Development Agenda’, the committee writes:

During the last decade the international community has collected substantial evidence on the role of culture in development. The conclusion is that, most often, development policies and projects which do not take into account the cultural dimension have failed. Culture effectively contributes to policies, strategies and programs targeting inclusive social and economic development, environmental sustainability, harmony, peace and

security. Culture is both a driver and an enabler of sustainable development (UCLG 2013).

As is well-exhibited with the first finding of the MA, the ‘human dimension’ and the ‘human actor’ is now being recognized for what it is on the planet Earth – a formative ‘engineer’ of the structures, lives, and entities that survive and persist, or, those that are wiped out or oppressed. The socio-political dimensions of conservation are far-reaching, and efforts to address the impacts of conservation on indigenous and local communities are increasingly recognized in tandem with new sustainable priorities. Yet this discourse must still develop methods to fairly incorporate urban *and* rural perspectives, and the diversity of cultural views of the human–nature relationship in order to ensure a sustainable and truly inclusive dialogue is maintained, as opposed to assimilation of minority views based upon development priorities. The ‘inclusivity’ that is stated by the SDGs contributes to a culture of sustainability through assimilation, thereby threatening cultural sovereignty and rights to self-governance. Sustainable development as articulated in the SDGs makes no mention of ecological knowledge and values, a conspicuous absence which threatens to perpetuate the loss of biocultural diversity and local ecological knowledge even as the UN strives to make ‘globalization a positive force for all.’<sup>9</sup>

Until we explicitly emphasize the need to consider the underlying forces driving the loss of local ecological knowledge and biocultural heritage, we will continue to see the loss of these ways of life, and the environmental and social harms that come from such displacement and losses. This is particularly relevant as the global human population is shifting towards an urban lifestyle, and is framed by urban experiences that do not necessarily contain local ecological experiences connected to the land.

#### IV. Moving Towards Sustainable Development by Addressing Biocultural Diversity

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<sup>9</sup> This was the ending clause of Sha Zukang’s introduction to the ‘The United Nations Development Strategy Beyond 2015’, (United Nations, 2012), p. iii.

The new SDGs has little language affirming alternative sustainable ways of life in relation to the culture of local communities, nor does it acknowledge the need for restorative and environmental justice surrounding industrial pollution and the transboundary politics of resource use amongst its specific targets. To take these recommendations seriously, these priorities should be made explicit in the SDGs, and could easily be articulated as a focused 18<sup>th</sup> goal that emphasizes the importance of promoting sustainable values and biocultural heritage. There are numerous articulations of this need, from the Indigenous People's Working Group already mentioned (March 2014) to the Indigenous People's Climate Change Biocultural Assessment (IPCCA 2009). The IPCCA, for instance, provides a theoretical platform of diverse communities to engage in terms of local ecological knowledge – advancing an ongoing engagement of cultural memory and management of the environment that is aware of the changes with the environment as a result of climate change not only as a result of the vulnerable places in which some of these communities live, but also as a result of their continual proximity with these ecosystems. This IPCCA methodological toolkit adapts the MA model and its relationship between human well-being and direct and indirect drivers to include 'Buen Vivir' and its relation with 'indigenous resilience' as the end goal for direct and indirect drivers of environmental change.<sup>10</sup> The toolkit has been prepared for the use of local IPCCA partners, indigenous peoples and communities interested in indigenous assessments of climate change.<sup>11</sup>

The biocultural framework serves as a focused subfield emphasizing the ethical engagement of human rights with consideration of biodiversity conservation priorities, in its biological and cultural expressions. This trans- and interdisciplinary framework has been expounded upon by indigenous communities, ecologists, philosophers and anthropologists, and articulates the deep interrelation between biological, cultural and linguistic diversity.<sup>12</sup> The

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<sup>10</sup> The guiding principles proposed by the IPCCA, which include Self determination, Climate Justice, Food Sovereignty, Endogenous Development, Adaptation/Mitigation, Buen Vivir. These would be appropriate targets to capture this alternative way of life – and without them subsistence economies and local cultures that value the connection and relationship to their local environs will remain excluded from the SDG discourse. See the IPCCA Toolkit, available online at: <http://ipcca.info/toolkit-en-ipcca-methodological-toolkit>.

<sup>11</sup> The IPCCA process is based on the implementation of UNDRIP (which considers rights such as self determination) and ensures that indigenous perspectives that come from local biocultural realities feed into global processes. Over 45 groups around the world have initiated biocultural assessments for cultural and ecological conservation. This is a unique formulation of sustainability which emphasizes the local community autonomy and capacity to adapt to change. This approach does not necessarily replace that incorporated into the current formulation of the SDGs, but it does require recognition in order to be protected as a possible response to sustainability needs.

<sup>12</sup> See additionally Pretty et al 2009, Gavin 2015, Maffi 2001, Rozzi 2013 for an overview of biocultural approaches.

implications of biocultural diversity as a conceptual unit has ramifications for the formal structures within society, such as formal education policy and foodways and the way we manage growth, development and concepts of well-being. Additionally, the biocultural framing also provides a mechanism to articulate ways the transmission of knowledge and meaningful engagement takes place and the ways that humans modify landscapes. Luisa Maffi commented on the purpose of framing biological, cultural, and linguistic diversity as an interdependent unit:

... the field of biocultural diversity has not adopted the conventional academic 'neutrality.' From its inception, it has embraced a strong ethics and human rights component, and has promoted a vision in which the protection of human rights (both individual and collective) is intimately connected to the affirmation of human responsibilities toward and stewardship over humanity's heritage in nature and culture. In this view, the biocultural diversity of life has intrinsic value, as diversity is the expression of life's evolutionary potential, and it ought to be protected and maintained. Any damage to it ought to be remedied, and any further damage ought to be prevented. This requires a complex but necessary, and ultimately winning, balance between nature conservation and human development, and between the rights of nature and the rights of humans (Maffi 2007).

Maffi and other biocultural conservationists argue that traditional ecological knowledge, cultural heritages, and place-specific names capture a relationship and way of relating that serves to instruct morally, perpetuating the values particular to that language and culture. When these local practices and language are lost, the meaning and ways of relating between humans and nature is similarly disrupted – as Maffi says, 'losing the link' (Maffi 2009, Maffi 1998). The process of 'breaking the link' between culture and place is driven by external forces which displace peoples from their native lands, disregard cultural traditions, or cause linguistic assimilation (Maffi 2005, Mühlhäusler 2001, Rozzi 2015). These forces are often mutually reinforcing, and ultimately lead to local communities losing control over their environments and culture. This disconnect or displacement process is further exacerbated as ecosystems are degraded and communities must leave their native lands or move to the market economy, away

from subsistence agricultural practices. The contrast of communities that are able to live within their ecological limits and those that are not also reveals that, while it is possible for humans to be destructive towards the environment, they can also serve as successful environmental stewards who add to the biocomplexity and richness of a given space.

Framing the drivers which shape these losses is not exclusively a discussion of societal priorities and values, but also the expression of these priorities as they shape the physical systems that in turn guide and shape lives (Díaz 2015, Hulme and Borie 2015, Tengö et al. 2017). The choice to institute policies that either reinforce the interconnection of biological, cultural, and linguistic diversity, or undermine this connection has implications for communities embedded within urban environments and those that live beyond in the fringes of the exurban.

For this reason, the legitimization of the unique view that indigenous and local communities hold, in terms of their environmental sensitivities and cultural memory, as well as affirming the internal logic, ethics, and priorities of these communities, has increasingly been argued for by ethnoecologists as opposed to completing studies or reports of these knowledge systems as a standalone process. I am arguing that biocultural heritage must be affirmed by non-TEK viewpoints in order to prevent the ongoing perpetuation of exploitative and discriminatory practices embedded in the global infrastructure. The impacts of these structures or drivers (such as the decision to teach only particular languages in the formal classroom) can be overlooked by non-TEK communities as they do not share the same cultural memory or environmental sensitivities and remain unaware of the consequent impacts.

Throughout the MDGs and SDGs, the language does not emphasize the need to protect local ecological knowledge and local ways of life as a fundamental heritage of the local human actor even as it acknowledges this importance. Fifteen years after the proposed MDGs, an explicit articulation of the need to maintain the ethical relationship urging protection of biodiversity, the environment, and local ecological knowledge is still missing within the revision of the goals. The absence of language affirming cultural sovereignty in its own right or the factors that threaten to undermine TEK or LEK remain in the new SDG. Language affirming alternative sustainable ways of life in relation to the culture of local communities is largely absent, additionally overlooking policy language to address the need for restorative and

environmental justice surrounding industrial pollution and the transboundary politics of resource use.

In a 2010 article of *Conservation and Society*, Jules Pretty and fourteen leading researchers in a diversity of fields identified the most significant threats to both cultural and biological diversity, and the distinct ways these threats or drivers impact both biological and cultural diversity and its interrelation. These ‘common drivers or threats and outcomes for biological and cultural diversity’ include: i) resource use through commercial sectors such as biofuels or timber industries, ii) extended commodification of natural resources, iii) in-migration of new economic actors into long-standing community structures, iv) pollution of waterways, including the damming of rivers and depletion or contamination of aquifers, v) the aspirations of consumer lifestyles worldwide, vi) the continuing globalization of food systems, vii) urbanization and rural to urban migration trends (though there are notable reversals of these patterns), viii) modernization of healthcare, ix) homogenization of formal education and the expansion of dominant belief systems, x) language erosion and loss, xi) formalization and privatization of land rights, xi) state territorialization and ‘nation building’, xii) expansion of transport network, particularly roadways, and xiii) assimilation.<sup>13</sup> Elsewhere Pretty describes the need to maintain socio-ecological resilience through the biocultural relationship, calling the environmental crisis also a ‘crisis of disconnection.’<sup>14</sup>

What is captured within the synthesis work of Pretty and colleagues is not only the identification of the shared drivers or threats to biocultural diversity, but the respective and interrelated outcomes for biological and cultural diversity as well. Understanding the ways in which these outcomes narrow the sphere of experience and the physical presence of biological and cultural diversity will certainly help clarify the threats to sustainable cultures and can help to articulate ways in which possible solutions can vanish from general consciousness. As clarified by the IPBES Conceptual Framework and the targets proposed by the UCLG (2015) which specify a need for cultural sensitivity in policy (UCLG 2015, UCLG 2017), indirect drivers that particularly target the conditions in which local ecological knowledge and biocultural heritage

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<sup>13</sup> Pretty et al., 2010, p. 105.

<sup>14</sup> In a follow-up review, Pretty wrote on ‘Interdisciplinary Progress in Approaches to Address Social-Ecological and Ecocultural Systems’, for *Environmental Conservation* (2011). Here, Pretty details the ‘Crisis of Disconnection’ (Pretty 2010, p. 128).

flourish must be acknowledged to avoid further eroding biological, linguistic and cultural diversity and the co-constitutive relationship between ecological knowledge and ecological values.

To take such recommendations seriously, these priorities should be made explicit in the SDGs and the subsequent targets listed to meet these goals. As such, I propose a summary goal that encapsulates this missing piece in the sustainable puzzle: the explicit recognition of local ecological knowledge and biocultural heritage to sustainability. The dynamic interrelation of biological, linguistic and cultural diversity must be captured as part of the integration of cultural considerations within sustainability policy. This goal would entail something like this:

*SDG #18: Protect, promote, and engage biocultural heritage to reinforce and support sustainable interconnections between diverse human societies and their distinct environments.*

## V. Conclusion: Biocultural Heritage – A Major Indirect Driver for Sustainable Development

In this article, I have argued that there is a need to consider local ecological knowledge, and biocultural heritage within the Sustainable Development Goals and within policy more broadly to address the interlinkages between biological, cultural and linguistic diversity. By reviewing instances in which the SDGs fail to be inclusive of the indirect drivers which threaten biocultural diversity and local communities, I have pointed towards an overarching conceptual blindspot within the newest set of revisions: the indirect drivers which serve as social forces to either undermine or reify biocultural heritage.

Fifteen years after the proposed MDGs, an explicit articulation of the need to maintain the ethical relationship urging protection of biodiversity, the environment, and local ecological knowledge and environmental values is still missing within the revision of the goals. This necessitates an affirmation of the deep histories of communities that have memories of the land, its changing landscape and conditions, the flora and fauna that co-exist within these shared spaces and the importance this form of knowledge plays in maintaining sustainable lifestyles. Additionally, not only does sustainability need to address factors that contribute to developing

ecological knowledge and environmental ethics, but policy should also consider factors that prevent communities from acting in accordance with their ecological conscience or culture. This includes consideration of language, folk knowledge, traditional practices, ethnobotanical knowledge, cultural sovereignty, self-determination and many more of factors underlying inclusivity which need to consider the fundamental threats to biocultural diversity and biocultural heritage. Just as the environment is facing losses through dominant development practices, communities are becoming more significantly disconnected, removed, and ignorant of the natural world and its ecological processes. In order to promote the care, management, and wisdom to live sustainably with the Earth and with the many cultures that thrive on this planet, it is necessary to halt and overcome the extinction of such experiences.

The disconnection of communities with the land and the confluent losses of biological and cultural diversity can be reverted if we address these threats or indirect drivers. For example, in 2012, the largest dam removal in U.S. history was initiated, demolishing the Glines Canyon Dam on the Elwha River of Washington State. Within a year, Chinook salmon returned to spawn in the rivers. Mel Elofson, who lives and works with the watershed, said of the return:

My grandmother lived on that homestead, and she walked down there as a young woman when the dams were being built and was devastated.... She used to talk about nearly being able to walk across the river on the backs of the salmon. There were tears of sadness back then, but if all the elders were alive, there would be tears of joy.<sup>15</sup>

When the habitats are degraded, wildlife displaced and absent, when even the memory of ecology that once-was is gone, a deterioration of the sustainable and thoughtful relationship between communities and the land occurs. This deterioration disrupts not just the experience of what once-was, but also of what could be. For these reasons, sustainable development must confront this hidden driver of biocultural loss, and overcome the drivers built into society

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<sup>15</sup> As quoted by Zachery Slobig in 'Salmon Return to Washington's Elwha River for the First Time in 102 Years', *Takepart*, September 17, 2014, <http://www.takepart.com/article/2014/09/17/salmon-return-elwha-river-first-time-102-years>. Last accessed July 13, 2015.

perpetuating loss of ecological knowledges and biocultural heritages. A step in affirming the deep connections that humans do share with place in many communities and cultures around the world is by affirming biocultural heritage, in its complexity, diversity, and uniqueness. A deeper analysis of the factors that erode biocultural heritage needs to be incorporated into our policy solutions for sustainable development, and this goal needs to be at the forefront of all of our thoughts as we seek social and environmental justice for a sustainable existence of our global society.

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