



# Bridging Worlds

## Decolonising Nature-Based Solutions Education



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Author: **Priscila Franco Steier** – Expert Biodiversity & Nature-based Solutions, ICLEI Europe.

Editor/Reviewer: **Kassia Rudd** – Communications Expert Biodiversity & Nature-based Solutions, ICLEI Europe.

Design: **Matthew Brown** – Senior Designer, Oppla

COVER IMAGE: Pataxó tribe, with feather headdress.



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# Summary

**This essay embarks on a transformative journey, exploring the integration of decolonial approaches into Nature-based Solutions (NbS) professional education. It delves into the rich tapestry of indigenous, local, and marginalized knowledge systems, challenging the colonial underpinnings that have shaped our interactions with nature. Inspired by the teachings of Antonio Bispo dos Santos and other black and indigenous decolonial activists, it calls for a revaluation of NbS education, urging a shift towards a philosophy of “buen vivir” – living well together in a community that includes the Earth and all its beings. This text sets the stage for a profound transformation in NbS education, advocating for justice and acknowledging the historical injustices that underpin our current relationship with the natural world.**

It further examines the critical role of indigenous perspectives in enriching NbS discourse and practice. Highlighting the holistic understanding of human-environment interconnectedness inherent in indigenous worldviews, it contrasts this with the compartmentalized view often found in modern western epistemology. Through examples such as controlled burns and agroforestry, it showcases how indigenous knowledge can offer valuable lessons for NbS, emphasizing the need for genuine collaboration and power-sharing in integrating this knowledge into NbS education and practice.



In its conclusion, the essay presents a call to action for educators, institutions, and policymakers to embrace a decolonized and inclusive approach to NbS professional education. It emphasizes the importance of dismantling colonial legacies in curricula and pedagogies and fostering a holistic approach that values the diverse knowledge systems and perspectives of Indigenous, local, and marginalized communities. By doing so, it aims to cultivate a new generation of NbS professionals equipped to lead with wisdom, empathy, and a deep commitment to planetary health and justice, bridging indigenous and western epistemologies to forge a sustainable future.



Ceremony in homage to Pachamama (Mother Earth) – ritual of the indigenous peoples of the central Andes, Ecuador, Cuenca.



## Padê – opening the pathways

**“Abre o caminho, o sentinela está na porta!  
Abre o caminho, pro mensageiro passar!”<sup>1</sup>**

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<sup>1</sup> Open the path, a sentry is at the door. Open the path for the messenger to pass through. Umbanda ritualistic song of public domain.







Trigueiros, Pernambuco State, Brazil.





Alcantara, Maranhao, Brazil.







As I sit down to pen the opening chapter of our journey, a narrative deeply rooted in the rich soils of ancestral wisdom and contemporary struggles, I am reminded of the rituals of Brazilian Afrodiasporic religions. These traditions teach us the importance of opening pathways with reverence and respect, making offerings to **Exu**, to our ancestors, and to the dead before starting the rituals, asking permission and blessings for connecting to the spiritual world (part of the ritual named in the Umbanda religion as Padê). In these rituals, Exu is acknowledged for his pivotal role as the messenger or ambassador between the material world and the spiritual realm, a bridge between two worlds that seem distinct yet are intrinsically connected. This concept of bridging worlds resonates deeply with the essence of my work and the spirit of this text, which is about creating pathways, not just in the physical sense, but opening new epistemic pathways that challenge the colonial underpinnings of common understandings and interactions with nature.



Following the rituals mentioned above, this introduction honours the inspiration for this text, and indeed the guiding light behind its inception – Antonio Bispo dos Santos, known affectionately as Nego Bispo. An educator, peasant, and Quilombola<sup>2</sup> activist, Nego Bispo’s life and work exemplified the role of a messenger, a translator, much like Exu. Chosen by his community to navigate the “law of the white” to reclaim their ancestral lands, Nego Bispo transcended this role to become a creator of contra-colonial pathways. His passing (just a few weeks after the initial outlines of this text were sketched) marked his transition into an ancestor, leaving behind a legacy that continues to inspire across communities, disciplines, and generations. His teachings, preserved in recorded speeches, books, and informal talks, serve as a foundation for this work. It urges us to look beyond the surface and to question the epistemological frameworks that guide our understanding of Nature-based Solutions (NbS).

The riverside Quilombo of  
Pedras Negras, Brazil.



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<sup>2</sup> A quilombola community is an Afro-Brazilian community descended from enslaved Africans who escaped from slave plantations in Brazil and established self-governing settlements called quilombos that last until the present.

This text is not just a reflection of Nego Bispo's teachings but is also a homage to the collective wisdom of affiliated messengers, thinkers, and educators like Ailton Krenak, Luiz Rufino, Kaká Werá Jacupé, and ancestors such as Lelia Gonzales. Their insights, coupled with a critical examination of western scientific literature on NbS, challenge us to rethink the very foundation of NbS professional education. We must move beyond the utilitarian approach that has dominated the field, towards a philosophy of "buen vivir" — living well together in a community that includes the Earth and all its beings. It's a call to action, a plea for epistemic justice and a decolonial approach to education that places Black and Indigenous thinkers at the heart of the debate.

As I embark on this journey through the pages that follow, my aim is to seed the ground for a profound transformation in how we conceive of and educate about NbS. This is not just about justice in the abstract sense but about acknowledging and rectifying the historical and ongoing injustices that underpin our current relationship with the natural world. By centring the voices and wisdom of those who have been marginalised, we can begin to forge a new path that honours the interconnectedness of all life and leads us towards a future where "buen vivir" is not just an ideal, but a reality. This chapter, therefore, is more than an introduction, it is an invitation to open new paths by honouring our ancient ability to connecting and learning from multiple realms of existence through meaning and affection.



# Naming – between creation and domination

Nhanderú Nhamandú tenondé-guá

Pytu yma mbyte re,

Mbae jekuaá cy re,

Ayvu rapyta ra i guero-jera,

Oguero- yvara Nhamandú ru-ete tenondé guá



Kamayura Village, Brazil.





**Our Father, The Great Mystery, the first,  
Before the Earth existed, amid the First Night,  
Before there was any knowledge of things,  
He created the foundation of the human language-lineage  
Which would become soul-word  
And so made the Great Spirit, who had become part and whole.**

**\*Guarani Creation Song, in Tupa Tenondé  
(Jecupé, 2001)**



In the beginning, “in the midst of the original winds” and through the reflection of his own wisdom, Nhanderu originated; and after establishing the foundations of creation and each of its aspects, he also generated the other creator deities: Jakairá, Karaí, Tupã and Ñamandu. Through the power of his sacred words and names, Ñamandu created the first beings and all of material existence. Ñamandu named and spoke into existence the first divine twins, one representing the day (Kuarahy) and the other the night (Jahy). Their emergence from his words marked the origin of duality and the cycles of light and darkness. Similarly, Ñamandu’s chanted words created the first ancestors of the Guarani people, as well as the plants, animals, waters, and all elements of the earth.<sup>3</sup>

Across various indigenous knowledge systems and ancient epistemologies, words, names, and language hold a cosmogonic<sup>4</sup> and cosmopolitical<sup>5</sup> significance – the material world being spoken into existence. This profound understanding underscores language as a sacred and creative force, capable of birthing and shaping reality itself. According to the Bambara tradition of Komo, the Word, Kuma, is a fundamental force, an instrument of creation, that emanates from the Supreme Being himself, Maa Ngala, creator of all things (Hampatê Bâ, 2010, pp. 170). Similarly, the Cree people view existence as emanating from breath, words, and naming, highlighting the intrinsic link between language and the fabric of reality (Hansen & Antsanen, 2018).

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3 There are numerous sacred narratives of the creation of the universe, living beings and material reality across the Guarani people. Some of those narratives are described in Jecupé (2001) and Clastres (1998).

4 Cosmogony: narrative of the origin and creation of the universe.

5 Cosmopolitics: a dimension of culture which defines and negotiates the role of different entities in the structure, balance, and dance of the universe.



Indigenous Guarani-Kaiowá at Aty Guasu Assembly.

Since ancient times, naming has been essential to order and make sense of reality. Modern western epistemology and science actualise the act of naming through concepts. However, western concepts do not operate only as means for understanding the world, but as dominant forces that actively imposes its own reality as hegemonic (Willinsky, 1998). This epistemic dominance is evident in the discourse surrounding NbS, where western scientific paradigms often fail to capture the complex, relational understandings of nature inherent in indigenous worldviews. The reverence for language and naming within indigenous cultures—as means to connect and co-create with the cosmos—stands in sharp contrast to the ways in which modern western science has historically named, categorized, and thereby controlled the natural world. This control extends to the utilitarian discourse on NbS, where the power to define and implement what counts as a ‘nature-based’ solution often resides with those aligned with western scientific traditions.

The discourse surrounding NbS is fraught with conceptual controversies that underscore the urgent need for pluralist and inclusive perspectives in environmental discourse and policy making. At the heart of these controversies lies the broad and sometimes ambiguous definition of NbS, which, while aiming to promote solutions that are harmonious with nature, often becomes a site of contention due to its varied interpretations and implementations across different contexts. This ambiguity can inadvertently lead to the misapplication of NbS, where initiatives labelled as 'nature-based' may not effectively contribute to biodiversity conservation or justice, as highlighted by critics (Melanidis & Hagerman, 2022; Kotsila et al, 2020).

Even in Europe where the concept has been advocated for over 10 years now, it is extremely common to see public officials and practitioners, for example, do not fully understand the concept, or resist to employ it. Related terms such as Green Infrastructure or Ecosystem Approaches are often preferred among practitioners, especially in the public administration (O'Sullivan et al, 2020). Additionally, concerns have been raised about the potential for NbS to facilitate land grabs (Larson et al, 2013), gentrification, or the commodification of nature, prioritising economic benefits over ecological integrity and social justice (Cousins, 2021; Tozer et al, 2020). The international debate extends to governance issues related to NbS implementation and stewardship, especially concerning the marginalisation of local and indigenous peoples in decision-making processes (Artelle et al 2019).





The very concept of “Nature” especially when viewed through the lens of indigenous perspectives that do not recognize a dichotomy between nature and culture (Reed et al, 2024). Indigenous knowledge systems, which offer invaluable insights into sustainable living and environmental stewardship, often find themselves marginalised in mainstream environmental policies and practices (Krenak, 2020). **This oversight not only undermines the potential efficacy of NbS but also perpetuates a colonialist ethos by sidelining non-western ontologies and epistemologies.** Thus, addressing the problem of concepts in NbS necessitates a critical examination of how nature is defined, understood, and operationalised, ensuring that the framework is inclusive, equitable, and capable of fostering genuinely sustainable solutions that respect both biodiversity and cultural diversity. The critical challenge, then, is to dismantle the codes of power (Delpit, 2006) embedded in the NbS concept. To recognize the need for a more inclusive, pluralistic approach to NbS policy, practice, and education. One that honours and integrates the depth of indigenous knowledge systems alongside modern western science. Evoking the indigenous thinker Ailton Krenak critique of the utilitarian view of life and nature prevalent in western thought: **Life is not useful!** (Krenak, 2020).



As stated by the Brazilian educator and contra-colonial philosopher Antonio Bispo dos Santos, “naming is dominating”<sup>6</sup>. And as we learned from different cosmogonies and ontologies across the globe, naming is creating reality. Mainstreamed concepts are usually inscribed and prescribed by dominant ideologies and epistemologies. Santos (2015) emphasizes the need to move beyond dogmatic epistemologies and methodologies that legitimize certain forms of knowledge over others. He argues that **concepts should be grounded in more collective, relational, and holistic ways of understanding the world**. He, therefore, proposes an Afro-Pindoramic (“african-amerindian”) worldview that challenges the vertical, rigidly defined, and individualistic nature of Eurocentric concepts and practices, and instead advocates for more dynamic, contextual, and pluralistic understandings of knowledge and meaning-making.



Artisan workshop in Otavalo, Imbabura, Ecuador.

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<sup>6</sup> Freely translated from portuguese: „Nomear é dominar.”

Embracing the Afro-Pindoramic perspective offers a transformative pathway towards reconciling indigenous, ancestors and modern western knowledge and worldviews within the realm of NbS professional education. By challenging the prevailing Eurocentric paradigms that have long dominated environmental discourse, this perspective invites us to envision a more inclusive and holistic approach to understanding and interacting with the natural world. It encourages a shift from the vertical, compartmentalized, and individualistic nature of traditional concepts towards a more dynamic, relational, contextual, and collective way of knowledge and meaning-making. In doing so, the African-Pindoramic perspective not only enriches the NbS framework with diverse epistemologies, thus promoting epistemological reparation, but also fosters a genuine respect for the interconnectedness of all life forms. This approach holds the promise of bridging knowledge systems, paving the way for truly sustainable solutions that honour both biodiversity and cultural diversity. In essence, it embodies the pluralist and inclusive spirit that is crucial for addressing the complex environmental challenges of our time, ensuring that NbS becomes a conduit for shared stewardship of our planet.





Dessana tribe, Cities of Manaus, State of Amazonas, Brazil.





# Reclaiming the centre – Indigenous perspectives & Nature-based Solutions

As stated above, indigenous perspectives on nature and its stewardship offer profound insights that can significantly enrich the discourse and practice of NbS. At the core of many indigenous worldviews is the belief that humans are not separate from nature but are deeply interconnected with the environment and all living beings. This holistic understanding contrasts sharply with the more compartmentalized view often found in modern western epistemology, where nature is seen as a resource to be explored, managed or conserved, often from a distance.

Ailton Krenak, a renowned indigenous leader and thinker from Brazil, challenges the conventional western dichotomy of “nature” and “culture,” advocating for an integrated understanding of human-environment relationships. Krenak’s perspective is emblematic of indigenous knowledge systems that see the environment as a living entity with which humans have a reciprocal relationship. This view not only emphasizes sustainability but also fosters a sense of kinship with the natural world, urging us to act as partners rather than exploiters (Krenak, 2019; Haraway, 2016).

Indigenous knowledge, honed over millennia, encompasses sophisticated land management practices that can offer valuable lessons for NbS. For example, the use of controlled burns for agriculture and forest management by indigenous peoples across the globe is being recognized for its effectiveness in reducing wildfire risks and enhancing biodiversity (Schmidt et al 2021; Lake & Christianson, 2020).



Moreover, indigenous techniques of agroforestry and polyculture farming stand as testaments to sustainable agriculture that maintains biodiversity, improves soil health, and secures food sovereignty. Such methods contrast with monoculture practices that deplete soil nutrients and rely heavily on chemical inputs, illustrating how NbS can benefit from indigenous approaches that prioritize ecological balance and long-term resilience.

The recognition of the intrinsic value of nature, a hallmark of indigenous worldviews, also invites a revaluation of the metrics used to assess the success of NbS. Instead of focusing solely on quantifiable outcomes, such as carbon sequestration or economic benefits, NbS can incorporate indigenous criteria for well-being and ecological health, reflecting a more holistic understanding of success.

**However, the integration of indigenous knowledge into NbS education and practice is not without challenges. It requires genuine collaboration and power-sharing, ensuring that indigenous peoples are not only consulted but are active partners in the design and implementation of NbS projects.** In recognizing the rich tapestry of indigenous cultures, it's crucial to approach the integration of indigenous knowledge into NbS with a nuanced perspective that avoids oversimplification or stereotyping. Indigenous communities around the globe are not monolithic; they possess a multitude of languages, traditions, and relationships with the environment that are shaped by their unique histories, geographies, and social structures. Their environmental practices and philosophies are dynamic, adapting to contemporary challenges while rooted in deep historical and cultural contexts.



Therefore, when discussing the contributions of indigenous knowledge to NbS design, policy and professional education, it is imperative to engage with these communities in ways that respect their autonomy, acknowledge the diversity of their experiences and wisdom, and recognize their rights to self-determination and to their intellectual property.

**This engagement must be characterized by active listening, learning, and collaboration, ensuring that indigenous peoples are not just consulted but are active co-creators in designing and implementing solutions.**

This collaborative approach can help avoid the pitfalls of tokenism and ensure that NbS education is culturally sensitive and contextually relevant.

**In this light, the path forward requires us to not only invite diverse voices to the table but to also question the shape and rules of the table itself.** It calls for an epistemological pluralism that embraces the complexity of the world we live in, recognizing that the journey towards sustainability is one that we must embark on together, drawing on the collective wisdom of humanity in all its diversity. By acknowledging and respecting indigenous epistemologies, NbS can move beyond a purely utilitarian view of nature and embrace a more inclusive, equitable approach that honours the rights and expertise of indigenous communities.





Kichwa – Amazonian, Ecuador Yasuni National Park.





A close-up photograph of a woman with dark skin, wearing a white patterned blouse and a red beaded necklace. She is focused on weaving a colorful cord (purple, red, yellow, green) around a wooden stick. The background is a blurred green forest.

## Decolonial Education – Contributions to NbS professional education

In the wake of making pluralistic approaches to producing and sharing knowledge a reality, decolonial education plays a central role. Decolonial education represents a transformative approach that seeks to dismantle the remnants of colonialism within the educational system, challenging the dominance of Eurocentric knowledge and narratives. **This perspective is not just about diversifying the curriculum with non-Western content; it's about fundamentally rethinking the ways we understand, teach, and learn about the world.**



The decolonial perspective to education is deeply rooted in the work of scholars like Achille Mbembe, who argues for the decolonization of knowledge itself—moving beyond the physical end of colonialism to address the ways colonial legacies continue to shape and limit our understanding of the world (Mbembe, 2015). It is essential to recognize and elevate the diverse ways of knowing that have been marginalized by dominant paradigms. **Beyond adding voices to the existing chorus, this is about fundamentally rethinking the composition of the chorus itself.** It involves a critical examination of whose knowledge is valued and why, challenging the hierarchies that have historically placed western scientific knowledge at the apex while relegating indigenous and local knowledge systems to the periphery.

This approach is crucial for NbS education, as it encourages the examination and integration of indigenous and local knowledge and technical systems alongside western research, fostering solutions that are more attuned to the specific ecological and cultural contexts they are meant to serve. By challenging the traditional hierarchies of knowledge, decolonial education opens up a space for a more inclusive dialogue where multiple perspectives are valued, leading to more innovative and adaptive approaches to environmental stewardship. Following this track, decolonial (and contracolonial) educators such as Antonio Bispo dos Santos, Léila Gonzalez, Luiz Rufino, Luiz Antonio Simas highlight the importance of acknowledging and integrating ancestral wisdom (black and indigenous) into pedagogic and scientific approaches (Santos, 2023; Rufino, 2020, Simas & Rufino, 2018).



**Considering the professional education field, this shift is not just theoretical but practical, requiring changes in how we design curricula, conduct research, and implement policies.** It means creating spaces within academic and professional realms where indigenous knowledge holders are recognized as experts, where local communities are engaged as partners in knowledge creation, and where diverse epistemologies inform and guide decision-making processes. This approach acknowledges that there is no single way to understand or interact with the natural world and that sustainability solutions must be as diverse as the challenges they aim to address. It unlocks the transformative potential of bridging knowledge systems and technologies on creating more innovative and sustainable solutions.



Weaving baskets to sell at fairs – Castelli, Chaco, Argentina.



**NbS, as a field that inherently relies on an intimate understanding of the relationship between human societies and the natural world, stands to benefit significantly from a decolonial approach.** By embracing diverse ways of knowing and interacting with nature, NbS higher education can foster more holistic, sustainable, and culturally sensitive environmental solutions. This shift towards a decolonial education framework can catalyse a deeper, more nuanced understanding of NbS, empowering students and practitioners to design interventions that are not only effective but also equitable and just.

In essence, decolonial education offers a pathway to re-envisioning higher education in NbS, advocating for a curriculum that is not only interdisciplinary but also deeply intercultural. It calls for a shift away from viewing nature and culture as separate entities, instead promoting an integrated understanding that reflects the interconnectedness of all life. By doing so, it lays the groundwork for developing solutions that are not only technically sound but also socially equitable and culturally resonant. Such an approach not only enriches the educational experience but also equips students with the skills and perspectives necessary to navigate the complexities of environmental challenges in a way that is respectful of both ecological and cultural boundaries.

Kraho indigenous community  
Aldeia Pé de Coco, northern areas  
of Cerrado, Itacaja, Tocantins, Brazil.







## Envisioning Decolonial Pathways in NbS Professional Education



Native indigenous Orinoco children in traditional wooden canoe, Venezuela.



In the journey towards a future where NbS are not only effective but deeply intertwined with the principles of global sustainability and justice, a decolonial approach to professional education stands as a beacon of transformative potential. This imperative to weave decolonial approaches into NbS professional education is a vital step towards rectifying historical injustices and fostering a sustainable future. This chapter delves deeper into the transformative approaches that can enrich NbS professional education, drawing upon the collective wisdom of indigenous, local, and marginalized communities, and challenging the remnants of colonialism in our educational systems.



## Centring Indigenous and Marginalized Knowledges

At the heart of a decolonial NbS professional education is the recognition and integration of indigenous, local, and marginalized forms of knowledge as equally valid and critical to understanding and solving environmental challenges. However, to truly centre Indigenous and marginalized knowledges in NbS education, we must go beyond inclusion to reparation. **This means not only incorporating these knowledge systems into the curriculum but also recognizing and addressing the power imbalances that have historically silenced these voices.** This approach calls for a curriculum that is co-created with indigenous communities and scholars, ensuring that indigenous pedagogies, epistemologies, analytical frameworks, and methodologies are not just included but are central to the learning experience. Collaborating with indigenous educators and community leaders to design and deliver the curriculum ensures that students receive a holistic and authentic education, grounded in the realities and wisdom of those who have lived in harmony with nature for generations. By doing so, we not only honour the depth and breadth of these knowledge systems but also open new avenues for innovation and sustainability in NbS.

## Challenging Eurocentrism and Colonial Legacies Through Critical Pedagogy

To move forward, we must also look back and critically examine the Eurocentrism and colonial legacies that have shaped traditional curricula and academic structures.





This involves a conscious effort to deconstruct dominant narratives and power dynamics that have historically marginalized non-Eurocentric knowledge systems. Educators and curriculum developers are encouraged to engage in this challenging work, creating a learning environment where students can critically analyze the structures of power and knowledge production that have marginalized non-European ways of knowing and understand the impacts of colonialism on environmental policies and practices, thereby fostering a more inclusive and equitable field. This involves a rigorous interrogation of the sources, narratives, and assumptions that underpin traditional environmental science and policy, making room for a more inclusive and diverse understanding of NbS.



Beans, corn, fruit, tomatoes, pumpkin on the embroidered skirt – in homage to Pachamama (Mother Earth) – Aboriginal ritual of the indigenous peoples of the central Andes, Ecuador, Cuenca.

## Integrating Intersectionality in NbS Education

A crucial step in envisioning decolonial pathways in NbS professional education is the integration of intersectionality as a foundational principle. Intersectionality acknowledges the complex and interconnected nature of social categorizations such as race, class, gender, and others, contributing to overlapping and interdependent systems of discrimination or disadvantage (Crenshaw, 2017, Akotirene 2019). In the context of NbS education, embracing intersectionality means recognizing that environmental issues do not affect all communities in the same way; they intersect with and are exacerbated by systemic inequalities, leading to disproportionate impacts on marginalized populations. To truly adopt a decolonial approach, NbS education must also critically examine how intersecting identities affect individuals' and communities' experiences with environmental challenges. This involves creating curricula that explicitly address the ways in which systemic oppressions influence environmental policies, access to resources, and vulnerability to climate change and environmental degradation.



## Cultivating a Culture of Reflexivity and Transformation

Building critical consciousness and reflexivity among students and educators is a journey that demands courage and vulnerability. It requires an ongoing commitment to self-examination, acknowledging one's own biases, and actively working to transform oneself and the institutions we are part of. This transformative process is essential for developing professionals who are not only skilled in NbS but are also ethical and equitable leaders, capable of navigating and addressing the complex socio-ecological challenges of our time. A decolonial NbS professional education prioritizes the development of critical consciousness among students and educators. This means cultivating an awareness of one's own positionality, biases, and the ways in which we may unconsciously perpetuate colonial/neocolonial structures. Through ongoing reflection and a commitment to unlearning, the curriculum encourages individuals to engage in personal and institutional transformation, paving the way for a more just and sustainable future.



## Embracing Collaborative Learning and Co-creation

Moving away from traditional didactic methods, a decolonial approach emphasizes collaborative, dialogical, and participatory learning. This pedagogical shift allows for a multitude of perspectives, experiences, and ways of knowing to be shared, valued, and critically engaged with. Such an environment enriches the learning experience and mirrors the collaborative nature of NbS work in the real world, where diverse stakeholders come together to co-create sustainable solutions. This pedagogical approach fosters a learning environment where diverse perspectives are not only welcomed but seen as essential to understanding and solving the multifaceted challenges of sustainability. Through group projects, community-based learning, and participatory research, students experience firsthand the power of collective action and diverse knowledge systems intermingling each other, leading to deeper and more lasting learning.





## Prioritizing Relevance, Reciprocity, and Ethical Engagement

Ensuring the relevance of the curriculum to the needs and realities of local communities underscores the importance of reciprocity and ethical engagement in NbS education. This relevance is achieved through the principles of reciprocity and responsibility in knowledge production and exchange. This approach recognizes that communities are not just sites of study but partners in knowledge creation and solution development. By prioritizing projects and research that offer tangible benefits to local communities and ecosystems, NbS professional education can model the principles of sustainability and justice it seeks to promote. By fostering a deep sense of responsibility towards the communities and ecosystems we study and work with, and by engaging in reciprocal relationships that respect and benefit all parties involved, we can ensure that NbS education and practice contribute positively to local and global sustainability.



## Championing Dynamism and Contextual Learning

Learning should be whenever possible, embedded in a contextual reality and place-based, embracing the complexity and interconnectedness of the natural world and human societies. As brought by the Mapuche people – “knowledge is not only in the people, but in every life that exists in the territory”<sup>7</sup>

In conclusion, these proposed approaches for a decolonial NbS professional education offer a pathway towards a more inclusive, equitable, and effective practice of NbS. In weaving these decolonial approaches into the fabric of NbS professional education, we embark on a path that honours the past, engages with the present, and seeds a future where sustainability and justice are not just ideals but lived realities. Through this transformative educational journey, we can cultivate a new generation of NbS professionals equipped to lead with wisdom, empathy, and a deep commitment to the health of our planet and all forms of life.

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<sup>7</sup> Testimony by the Mapuche Pety Piciñam, collected by Karine Narahara in Neuquen, 2017 (Narahara, 2022).

Maya shaman performs land blessing ceremony, San Andres Semetabaj, Lake Atitlan, Guatemala.





## Call for action

At this critical juncture, faced with the pressing challenges of environmental degradation and social inequities, there emerges a compelling call to action. This call resonates with the urgency of the present moment and the potential for a sustainable future. It invites educators, institutions, and policymakers to embark on a transformative journey, one that reimagines the essence of NbS professional education through a decolonized and inclusive lens.

**This call to action is not merely a suggestion; it is an imperative, a moral and ecological necessity to prepare future professionals capable of navigating and healing our world's complex environmental challenges through the innovative and respectful application of NbS.**



**At the heart of this transformative journey lies the recognition that the environmental crises we face are not only ecological in nature but are deeply entwined with the historical injustices and power imbalances that have long shaped our societies.** The path forward, therefore, demands an educational paradigm that is as much about unlearning as it is about learning anew. It is about dismantling the colonial underpinnings of our curricula and pedagogies, and embracing a holistic approach that values and integrates the diverse knowledge systems, perspectives, and wisdom of Indigenous, local, and marginalized communities into the core of NbS education.

**To educators,** this call to action invites you to become architects of change within your classrooms and beyond. It challenges you to weave the principles of NbS into your teaching, ensuring that students understand the interconnectedness of human and natural systems. It encourages you to **foster environments where students are not passive recipients of knowledge but active participants in a co-creative process that values their voices and experiences in developing sustainable solutions that harmonize with nature.** In doing so, you not only equip your students with the skills and knowledge to address environmental challenges through NbS but also empower them to become agents of change in their communities and the world at large.





**For institutions,** this call demands a bold reimagining of the structures and systems that govern education. It is an invitation to cultivate spaces that prioritize NbS education as a cornerstone of learning, acknowledging and actively seeking to redress the historical and ongoing injustices that pervade our societies. This means **investing in diverse faculties with expertise in NbS, developing inclusive curricula that highlight the role of nature in solving contemporary challenges, and creating equitable opportunities for all students to engage with NbS.**

It also means fostering partnerships with Indigenous and local communities that are built on principles of reciprocity, respect, and mutual benefit, recognizing their invaluable contributions to NbS knowledge and practice.

**Policymakers,** too, are integral to this transformative journey. This call to action urges you to develop and implement policies that support the integration of decolonized and inclusive approaches in NbS education. It is a call to prioritize funding and resources for programs that prepare students to tackle environmental challenges through NbS, emphasizing holistic and justice-oriented solutions. Moreover, it is an appeal to recognize and valorize the contributions of Indigenous, local, and marginalized communities in shaping NbS policies and practices that affect their lands, waters, and ways of life. Through such collaborative and inclusive policymaking, we can ensure that the NbS solutions we devise are not only effective but also equitable and just.



The urgency of preparing future professionals to address our planet's environmental challenges through NbS education, viewed through a decolonized and inclusive lens, cannot be overstated. The time to act is now. Together, educators, institutions, and policymakers have the power to catalyze a paradigm shift in professional education—a shift that moves us towards a future where sustainability and justice are not mere aspirations but lived realities, deeply rooted in the respectful and innovative application of NbS. Let us heed this call to action with courage, creativity, and a deep commitment to the health and well-being of our planet and all its inhabitants.





## Beginning—Middle—Beginning: Bridging Worlds through Nature-based education

In the tapestry of human understanding, the threads of knowledge are woven from countless perspectives, each adding depth, colours, and textures to our collective wisdom. At the heart of this intricate weave lies the potential for a profound reconciliation – a blending of indigenous epistemologies with western thought, particularly through the lens of NbS education. This concluding chapter is not an end but an invitation to begin a journey of bridging worlds, where the wisdom of the past and the innovations of the present intertwine to shape a sustainable future.



Imagine time not as a straight line but as a spiral, where beginnings and endings merge, where the lessons of the past inform the actions of the present, the actions of the present can reconcile the past, and where every step forward is a step closer to understanding our place within the natural world. This non-linear perspective, embraced by many Indigenous cultures, contrasts sharply with the monoculture and colonialist viewpoints that have long dominated Western thought, advocating for a singular way of knowing and being. Yet, as we stand at the crossroads of ecological crisis and social transformation, the need for a more inclusive, interconnected approach to NbS education has never been clearer.

Bridging indigenous and western epistemologies offers a pathway to this transformative education. It invites us to see the environment not as a backdrop for human activity but as a community to which we belong, a living entity with which we share a deep, reciprocal relationship. Indigenous knowledges and technologies, with their profound understanding of bio-interactions<sup>8</sup>, provide invaluable insights into living harmoniously with nature. When woven together with wNbS emerges—one that is capable of inspiring innovative solutions to environmental challenges while honouring cultural diversity and promoting community involvement.

This convergence of knowledge systems encourages us to question the assumptions that underpin our relationship with the natural world. It challenges the utilitarian notion of nature, urging us instead to recognize the intrinsic value of all living beings and the interconnectedness of life. By embracing a more holistic, inclusive perspective on NbS education, we open the door to transformative learning experiences that empower students to become not only skilled professionals but also compassionate stewards of the planet.





As we navigate this journey of bridging worlds, let us draw inspiration from the cyclical rhythms of nature itself—the seasons’ ebb and flow, the cycles of growth and decay, and the endless dance of creation and regeneration. Let us remember that in the heart of every ending lies the seed of a new beginning, and in the fusion of Indigenous and Western epistemologies, we find a powerful catalyst for change.

Acknowledging the gap in practical recommendations for decolonial education within this text, we emphasize that this is merely the start of a conversation that must be further embedded in practical examples. This acknowledgment serves as a commitment to continue exploring and integrating actionable strategies that embody the principles discussed, ensuring that the journey towards a decolonized, inclusive educational framework is not only envisioned but actively pursued and realized.

In this sense, this is not the conclusion, but a new chapter in an ongoing dialogue between diverse ways of knowing and being. As we move forward, let us carry with us the spirit of “Beginning-Middle-Beginning,” embracing the complexity, uncertainty, and beauty of bridging worlds through Nature-based education. Together, we can forge a future where humanity and nature thrive in harmony, guided by wisdom both ancient and new, and inspired by a shared vision of planetary health and well-being.

### **The future is ancestral!**

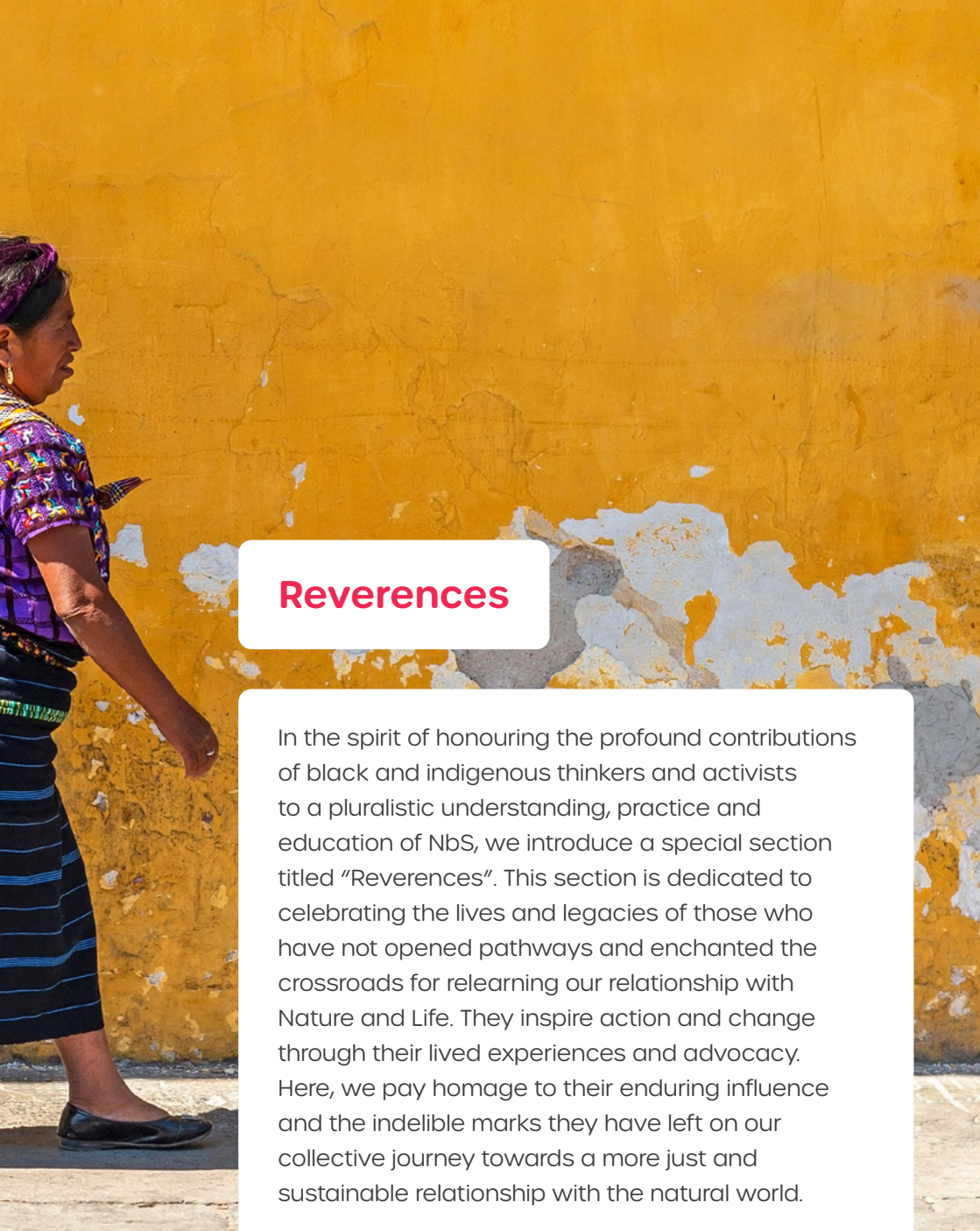
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8 Biointeraction is a form of organic, non-hierarchical interaction that recognises the interdependence between all living beings and nature, as conceptualised by Antonio Bispo dos Santos (2015).









## Reverences

In the spirit of honouring the profound contributions of black and indigenous thinkers and activists to a pluralistic understanding, practice and education of NbS, we introduce a special section titled “Reverences”. This section is dedicated to celebrating the lives and legacies of those who have not opened pathways and enchanted the crossroads for relearning our relationship with Nature and Life. They inspire action and change through their lived experiences and advocacy. Here, we pay homage to their enduring influence and the indelible marks they have left on our collective journey towards a more just and sustainable relationship with the natural world.

**Antonio Bispo dos Santos (Nego Bispo)** – was a peasant, poet and political activist farmer. He was a “translator of knowledges” who advocated for countercolonization and the confluence of different civilizations, urging universities to learn from indigenous languages, architecture, and practices.

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**Ailton Krenak** – a renowned environmentalist, philosopher, writer, and poet from the Krenak people of Brazil, who has played a pivotal role in advocating for Indigenous rights in Brazil. He is known for his unique ability to convey profound concepts through poetic and oral language, blurring the boundaries between landscapes, human beings, animals, rivers, and mountains.

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**Célia Xakriabá** – an indigenous educator, activist, and politician from the Xakriabá people of Brazil who became the first indigenous woman elected as a federal deputy. She is a prominent advocate for indigenous rights, promoting the advancement of indigenous women, land rights, education, and the revitalization of native languages and cultures in Brazil.

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**Carla Akotirene** – a Brazilian activist, researcher, author, and columnist who focuses on black feminism, intersectionality, and the impacts of structural racism and sexism, particularly within the criminal justice system.





**Geni Núñez** – an activist and psychologist from the Guarani people of Brazil. She is a prominent voice critiquing the monoculture imposed by western colonialism and its erasure of indigenous knowledge systems. Her work also examines how colonial legacies and Eurocentric norms have shaped romantic relationships, advocating for more pluralistic and decolonized understandings of love, intimacy, and family structures.

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**Kaká Werá Jecupé** – a writer, environmentalist and translator. He is a descendant of the Tapuia people and was welcomed into the Guarani community, with whom he has carried out extensive historical, linguistic and cultural research. Involved in educational processes, he works to value, record and disseminate the ancestral knowledge of indigenous peoples.

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**Lélia Gonzalez** – was a Brazilian intellectual, politician, professor, anthropologist, and human rights defender who pioneered black feminism in Brazil. Her work articulated the experiences of African descendants and indigenous peoples through the concept of “Amefricanity.”

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**Luiz Rufino** – a Brazilian educator and professor known for his work on decolonial education and the “pedagogy of the crossroads” (pedagogia das encruzilhadas). His approach emphasizes decolonising education by drawing from Afro-Brazilian epistemologies and religions, and interculturality to challenge Western colonial knowledge systems.



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## Resources

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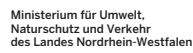
<https://blogs.soas.ac.uk/decolonisingsoas/files/2018/10/Decolonising-SOAS-Learning-and-Teaching-Toolkit-AB.pdf>

<https://www.mmu.ac.uk/about-us/professional-services/uta/reducing-awarding-gaps/decolonising-the-curriculum-toolkit>

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