Journal of Education for Multilingualism

2025 | volume 2 | issue 1
pp. 75–101
ISSN 3064-6995

RESEARCH ARTICLE

Sustaining Indigenous Language and Knowledge in Island Communities of the Maldives: Challenges and Facilitators

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Article Info

Received: February 25, 2025
Accepted: May 5, 2025
Published: June 21, 2025

Abstract

Languages hold vital knowledge about the natural world, which plays a key role in environmental protection and sustainable development. However, the historical marginalization of Indigenous Peoples and the spread of neocolonial ideologies have devalued this knowledge, often excluding it from education. This erasure not only leads to the loss of valuable insights but also hinders identity development and meaningful engagement. This paper explores the land-language-knowledge nexus as a vital response to the climate crisis through the preservation of linguistic and biocultural diversity. Focusing on the Maldives, we present findings from an exploratory ethnographic study across seven island communities. Drawing on qualitative data from 135 participants, we show how knowledge of landscapes and lifeforms is eroding, along with the Dhivehi language. While participants were aware of global environmental issues, they lacked understanding of local biodiversity. Three interrelated processes contribute to this loss: a shift from Dhivehi to English among youth, a Western-centric educational model that sidelines traditional knowledge, and lifestyle changes that distance people from nature.

Keywords

environmental sustainability; Indigenous knowledge; language shift; Maldives; traditional ecological knowledge

INTRODUCTION

Language plays an essential role in shaping our understanding of the natural world, acting as a bridge between humans and the environment. The connection between language and land forms a symbiotic relationship, with languages encoding crucial knowledge about the environment–knowledge that is increasingly recognized as vital for environmental conservation and sustainable development (Harrison, 2023). Language arises and reverberates through land, intrinsically connecting humans to our physical, social, and cultural environments (Ferguson & Weaselboy, 2020). The relationships we have with language and land partly determine our worldview, informing our reasoning and decision-making processes (Medin & Bang, 2014).

Generally, Indigenous peoples have a more eco-centric view of the human connection with nature, seeing humans as an integral part of the biosphere, rather than as detached entities

(Kimmerer, 2013). On the other hand, Western perspectives frequently position humans as separate from and superior to nature, using it primarily as a resource for human consumption (Bang, 2015). Through historical marginalization and the promotion of neocolonial ideologies, there has been an endorsement of anthropocentricism, and a devaluing of traditional knowledge encoded and expressed through the languages of Indigenous People (Wolfe, 2006). The decline of traditional languages and knowledge systems in educational contexts not only threatens the survival of Indigenous worldviews but also hinders Indigenous learners from engaging meaningfully with education in ways that affirm their identities, values, and ways of knowing (Manan & Tul-Kubra, 2022).

Our focus in this paper is to highlight the significance of the land-language-knowledge nexus in countering the increasing climate crisis by preserving and promoting linguistic and biocultural diversity. Previous studies have demonstrated that a strong connection between language and an individual's understanding of nature can foster sustainable behavior (Hatty et al., 2022; Schutte & Malouff, 2018). Language is central to understanding human knowledge and practices linked to the use and experience of local nature (Inglis & Pascual, 2023).

We present the context of the Maldives, which faces an existential threat due to its environmental vulnerability (Malatesta & di Friedberg, 2017). Through an ethnographic exploration of seven island communities in the Maldives, we aim to show how these communities conceptualize and articulate their connections with the natural world. In doing so, we hope to better comprehend how people think about, understand, and describe nature and their connections to it, and the role of language in these processes. This paper attempts to answer the following research question: How does engagement with nature and relationality impact the transmission of traditional ecological knowledge and language use?

We offer this perspective as researchers and educators who are Indigenous to the Maldives who have been privileged to have studied in Western education systems and apply their knowledge, skills, and lived experiences to the Maldives context. In this paper, Naashia (first author) provides the language and education focus while Mizna and Inaz (second and third authors, respectively) bring their perspectives as experts in biodiversity conservation and sustainable development. The data for the study was gathered through Mizna's fieldwork for a prior project. In the next section we first offer the theoretical underpinnings for the study before moving on to providing some background on the research context.

THEORETICAL BACKGROUND

This study is grounded in a theoretical framework that interweaves relational values, Traditional Ecological Knowledge (TEK), ethnoecology, and colonialingualism to examine the intricate relationships between language, knowledge, and the environment.

Relational Values

The concept of relational values (Muraca, 2011) moves beyond the conventional instrumental and intrinsic values typically associated with nature. These values emphasize the deeper, more personal connections that individuals and communities form with their environment, grounded in cultural beliefs, practices, and social relationships (Pape, 2024). Scholars of relational values focus on the importance of connectedness, care, responsibility, stewardship, kinship, community, and identity in the context of people's engagement with nature (Chan et al., 2016; dos Santos & Gould, 2018).

In this study we examine relational values through an indigenous lens. Indigenous epistemologies that frame the worldview of these island communities are inherently relational, suggesting that nature, humans, and non-human entities are deeply interconnected (Berkes, 2012). These interconnected systems of knowledge, belief, and practice can offer valuable perspectives for understanding how cultures interact with their ecological environment and serve as a framework for understanding how ecological knowledge is communicated and preserved within the community, particularly through language. Language becomes more than a mere communicative tool; it is a vessel for transmitting relational values, encapsulating cultural understandings of the environment that shape behaviors, traditions, and sustainable practices.

Traditional Ecological Knowledge (TEK)

Central to this study is the framework of Traditional Ecological Knowledge (TEK), which encompasses the accumulated knowledge, practices, and beliefs that Indigenous communities develop over generations about their environment (Berkes, 2012). TEK is not static but evolves through adaptive processes shaped by ongoing relationships between people, non-human entities, and the natural world. It represents the lived epistemology that arises through observation combined with cultural values. The linguistic intricacies of referring to natural phenomena based on TEK reflect an intimate understanding of the environment and demonstrate the reciprocal relationship between language and ecological practices.

Ethnoecology

Ethnoecology examines how different cultures interpret and interact with nature through their systems of belief, knowledge, and practice (Barrera-Bassols & Toledo, 2005). It prioritizes the emic perspective, giving insights into ecological systems from within the communities being studied (Toledo, 2002). By centering Indigenous perspectives, ethnoecology highlights the diversity and sophistication of Indigenous environmental worldviews. Through an ethnoecological approach, we can study how linguistic shifts impact the transmission of knowledge and the sustainability of traditional practices.

Colonialingualism

Colonialingualism (Meighan, 2022) provides a critical lens for understanding how colonial structures continue to shape and dominate linguistic practices, ideologies, and hierarchies. It goes beyond the historical imposition of colonial languages and draws attention to how colonial logics persist in contemporary societies, often leading to the marginalization of Indigenous and local languages and epistemologies. The concept expands Philipson's (1992) work on linguistic imperialism where English has been used as a tool to colonize other language communities, and aligns with Decolonial Theory (Mignolo, 2007)) emphasizing the need to privilege marginalized knowledge systems and challenge Western narratives of modernity.

Whether manifested overtly or covertly, colonialingualism perpetuates colonial legacies, imperial ideologies, and systemic inequities (Chiblow & Meighan, 2022). It is subtractive and harmful for the identities and heritages of multilingual and multicultural learners, undermines Indigenous and endangered languages and epistemologies, and contributes to the ongoing disenfranchisement of minoritized communities as well as environmental degradation (Meighan, 2022). While languages themselves are not inherently oppressive, the elevation of certain languages as inherently superior disrupts linguistic diversity and perceives multilingualism through a monolingual lens (Piller, 2016). This privileging of dominant languages promotes a deficit discourse that delegitimizes non-dominant linguistic and epistemic traditions, framing them as impediments to development and progress (Pennycook, 2017).

With the dominance of English as a global language, it has functioned not simply as a medium of communication but as a carrier of Eurocentric rationality— positioning itself as the language of science, logic, and progress (Canagarajah, 2002), contributing to the killing of other languages, or linguicide (Skutnabb-Kangas & Philipson, 2001) and what de Santos

(2014) terms epistemicide–the erasure of Indigenous epistemologies. Indigenous knowledge systems are often rooted in oral traditions, relational ontologies, and holistic understandings of the world. With the rise of English around the world, other ways of knowing and communicating are frequently delegitimized as they do not involve empirical evidence, individualism, or linear reasoning (Battiste, 2013). Thus, through the imposition of a new language, what counts as legitimate knowledge and who is authorized to produce it are also questioned.

The privileging of English in educational contexts perpetuates the divide between traditional and Western epistemologies and learners are expected to conform to normative English practices that reflect Eurocentric values and practices, rendering other worldviews inferior or invisible. As a result, language becomes a site of identity negotiation and struggle as speaking in English often means silencing parts of oneself and one's community knowledge (May, 2014; Flores & Rosa, 2015).

By integrating relational values, TEK, ethnoecology, and colonialingualism, this theoretical framework foregrounds the interconnectedness of language, knowledge, and the environment, enabling a nuanced exploration of how multilingual and Indigenous communities navigate, resist, and transform colonial and monolingual paradigms.

RESEARCH CONTEXT

The archipelago of the Maldives lies approximately 480 km southwest of India, spanning a length of 900 kilometers from north to south and is approximately 130 kilometers wide. The 1190 or so coral islands of the country are formed into 26 natural atolls. Atolls are oceanic reef formations enclosing a lagoon. The focus of our research is on the interaction between the people of these islands, the resources within the reefs surrounding the islands, and the language used to describe this.

The interactions people have with their surrounding natural environment undoubtedly play a significant influence in the development and evolution of language within a community (Bentz et al., 2018; Penz & Fill 2022). Communities in the Maldives live in a coastal setting where their everyday is connected to the surrounding marine environment. More than 70% of the islands in the Maldives are smaller than 10 hectares and of these, 34% are smaller than 1 hectare (Mohamed & Jameel, 2023). The small size of the islands is indicative of the proximity of the people to the surrounding marine environment. The geographic dispersion of the islands causes people within each community to be relatively self-sufficient.

The most recent statistics show that of the 515,122 population, 26% are immigrants, typically those who are on time-restricted work visas (Maldives Bureau of Statistics, 2022). More than 41% of the total population is residents in Maale, the capital city. About 40 islands have populations below 500 people. The majority of the islands have populations ranging from 500 to 999 people. Our study includes island communities with populations between 800 and 3500 people. In the last few decades, there have been increased flows of internal migration, with many families moving to Maale as it has better employment and educational opportunities. As a result, many of those who now reside on the islands are elders or the families of individuals employed on the island or at nearby resorts. With the expansion of tourism throughout the country, reef-related activities have grown in popularity not only among visiting tourists, but also among locals who have embraced new ways to enjoy the marine environment for recreation.

Dhivehi is the official language of the Maldives. It is the southernmost Indo-Aryan language in the world, has Sanskrit foundations, and is related to Sinhalese language spoken in neighboring Sri Lanka (Fritz, 2002). The only other speech community that uses Dhivehi are the inhabitants of the island of Minicoy in India. The variety of Dhivehi that is spoken in Minicoy is known as Mahl. Maldivians take great pride in the fact that the Dhivehi language is unique to the Maldives and has its own writing system called Thaana. Maldivians describe themselves as Dhivehin [the people of Dhivehi] linking their identity inextricably to their language (Mohamed, 2019). The strong link Maldivians have with nature and the marine environment is reflected in their language, and its rich oral literature. For example, there are many synonyms for "sea", with the depth, color and location of the water determining its name. Terms such as, *moodhu*, *falhu*, *vilu*, *kandu,* and *maa kandu* all refer to the various bodies of water around an island or within an atoll system. The marine environment is also a recurrent theme in its oral literature, lending clear evidence to the centrality of the natural habitat in the development of the language. Stories such as *Dhonmohonaa Miyaru* (Dhon Mohonu and the Shark), and *Maakanaa kalo vaahaka* (The story of the heron) are traditional folktales that embed detailed descriptions of the marine traditional ecological knowledge.

Historically, the geographical nature of the Maldives restricted the opportunities for widespread language contact. Being on a major seafaring route, the Maldives was often visited by travelers and merchants. Three significant events in the country's history left linguistic impacts on Dhivehi. The written history of the Maldives begins in 1153, when it embraced Islam. This religious conversion is expected to have initiated the influence of Arabic on

Dhivehi – an influence that continues to the present day. For nearly two decades during the 16th century, the Maldives was colonized by the Portuguese. Even after their rule formally ended, they continued to exert strong influence over the country for several decades. In the late 19th century, the Maldives was colonized by the British. This 78-year relationship directly influenced the transformation of the education system and led to the introduction of English as a core part of the curriculum (Mohamed, 2016). With English becoming the undeniable global language, Maldivians were drawn to the opportunities it offered, which allowed English to dominate the education system. The significance of English in the everyday lives of Maldivians intensified as it became the sole language of instruction in schools at the turn of the millennium, shifting young people's attitudes towards the global language at the expense of Dhivehi (Mohamed, 2020).

METHODS

The research we present here is exploratory and ethnographic, focusing on people's knowledge of their marine environment, how they interact with it, and the impact this interaction has on their language. Ethics approval was obtained from The University of Canterbury where the second author was based at the time of data collection. Utilizing culturally responsive data-gathering methods, we interviewed over 135 participants about their interactions with their surrounding reef environment. Participants were chosen from seven island communities across the Maldivian archipelago to get geographic coverage within the country. Written consent was not sought as people in these communities often regard paperwork as coercion involving government authorities. Therefore, the decision was made to obtain oral consent after verbally explaining the study's purpose and participant expectations and rights. Table 1 captures the location and size of each island community and their main interactions with the reef environment. To protect the identities of the communities, the islands were labelled by a letter.

Table 1. Demographic Details of Selected Island Communities

island	atoll	population at time of data collection	main activities and interactions with reef
Island A	Haa Alif (north)	882	tuna fishing reef fishing community lagoon fishing
Island B	Haa Alif (north)	901	tuna fishing reef fishing community lagoon fishing recreational fishing trolling

Island C	Haa Dhaal (north)	1476	tuna fishing reef fishing grouper fishery community lagoon fishing recreational fishing
Island D	Baa (mid north)	977	tuna fishing reef fishing grouper fishery community lagoon fishing recreational fishing trolling tourism
Island E	Baa (mid north)	1117	tuna fishing reef fishing community lagoon fishing tourism
Island F	Seenu (south)	3506	tuna fishing tourism
Island G	Seenu (south)	2638	tuna fishing tourism

The island communities are socially and culturally homogenous, enjoying a range of interactions with the surrounding reef environment for their livelihood as well as recreation. Participants were mainly male (70%) and ranged in age from teenagers to elders in their 80s. Table 2 provides some demographics of those who participated in the study. Most of the participants who were employed worked in areas related to the marine environment. This included fishermen, resort workers, boat crew, sand miners and fish processors. About 14 per cent of participants contributed, in their official capacity as Island Office staff.

Table 2. Demographics of Participants

variable		**number**	**percentage**
gender	male	95	70
	female	40	30
age	teen to 20s	11	8
	30s	21	16
	40 to 60	80	59
	over 60	23	17
employment	island officials	19	14
	fishermen	27	20

	employed on island (health worker, island office, NGOs, retail)	18	13
	self-employed (business owner, construction, fish processing, sand mining)	18	13
	resort workers	12	9
	retired fishermen	11	8
	students	5	4
	housewives	18	13
	retired/unemployed	7	5

The central tenet of our research design was Indigenous relationality which emphasizes the interconnectedness of all beings and the importance of ethical relationships with each other, ancestors, the natural world, and future generations, viewing relationships as the foundation of existence and a source of knowledge and responsibility. Based on this worldview, building good connections with our research participants to gain their trust and using methods of data gathering that honored those relationships was essential. The data was gathered in various ways, including individual interviews, focus group discussions, participant observations, and researcher observations. As Morrison (2020) observes, research with Indigenous peoples is often non-linear, and utilizes different forms of storytelling. Following culturally appropriate research protocols, we focused on building relationships through open, informal discussions, similar to everyday conversations. These discussions involved storytelling, reflection, and sharing of ideas and information to reach an understanding between the researcher and the participants. Rather than the formal relationship between the researcher and the participant expected in typical academic research, the relationship between the researcher and the participants in our case was one more akin to a trusted friendship. The informality of the conversations was deliberate to minimize researcher influence and to allow the participants to steer the conversation towards matters of importance to them.

As the researcher conducting the fieldwork, Mizna used the following themes as a guide, but often found that the conversations diverged from them: (1) access and use of reefs and reef resources, (2) consumption and distribution of resources in the community, (3) local knowledge on resource use, (4) changes to resource availability and (5) property rights and management rules of reefs and reef resources. Some of the discussions were conducted individually (in the style of an interview), and some were carried out with groups of participants (in the form of

focus groups). In all cases, they took place in informal settings, with everyday conversations interspersing the research focus. All discussions took place in Dhivehi and were audio recorded with consent.

In addition to discussions, we conducted participant observations, which allowed us to witness everyday social activities in the marine environment and identify information that may not have emerged during interviews. During community visits, the participants reported, and researchers observed, activities such as night fishing excursions with both, large and small family groups; trolling, a type of reef fishing done during the day near the islands; boats returning from fishing; selling of fish on the beach; picnics; preparing food for communal festivities; collecting seafood from the reef; "making sand", a process of collecting beach sand to lay in the courtyards of houses; and visiting houses when invited. These interactions also gave us the opportunity to hear their everyday conversations within the families and among children. This engagement with participants through observations provided a more in-depth understanding of people's knowledge and engagement with the environment and their language use than would have been possible from simply interviewing them.

All interviews, discussions, and participant observation notes were transcribed and used in the identification of themes. The text was iteratively coded and then these codes were analyzed using Thematic Analysis (Braun & Clarke, 2006). The analysis was inductive, allowing the data to guide in the theme formation. The themes were analyzed for observations behaviors, and interactions related to the aim of the research. In the next section, we discuss the main findings that emerged from our analysis.

FINDINGS AND DISCUSSION

In this section, we present four themes that relate to the aims of the study. The first of these focuses on how people engaged with the marine environment. The data highlighted how the interactions of communities with their surrounding marine environment have changed over time. Historically, interactions in island communities were predominantly subsistence—and livelihood-based. However, the range of interactions has widened to include recreational purposes and other economic uses. A second recurring theme related to the growing disconnect between people and nature at both personal and collective levels. These changes undoubtedly influenced local knowledge, particularly among younger generations. As a corresponding result, changes in patterns of language use were noted, especially the loss of local terminology and names for the natural environment. The third and fourth themes explore an observed shift

towards Western-centric educational paradigms and globalized worldviews that have seemingly caused a societal language shift from Dhivehi to English. In presenting the findings, we use pseudonyms for participants and, where relevant, present quotations in their original Thaana script, a transliteration version, and an English translation.

Engagement with the Marine Environment

Historically, fishing served as the primary activity for most island communities in the Maldives. Hussein, a retired fisherman, recalled that fishing was once a daily endeavor – an activity they would engage in close to the island. “We would fish [tuna] and come home and again go and fish [tuna] some more on the same day.” In Hussein’s recollections of how fishing took up their entire day, *mas* | ދަށ, which literally means fish, was synonymous with tuna, reflecting its centrality in local fishing practices. Fishing was not only a vital economic activity but also a communal experience. “Everyone goes [tuna] fishing (*emmen ves mahah dhey* | ޢަމްމެން ވެސް ދަނީ ދާ ފަށ)” is a common phrase describing how people used to traditionally interact with their surrounding marine environment. Interestingly, Maldivian fishermen use the term “going fishing (*mahah dhiun* | ދަނޑި ދިއުން)” to refer to catching tuna which can be caught inside the atoll waters. Tuna, especially skipjack tuna, had been used traditionally as a trade commodity where hot smoked tuna, dried tuna and other island products were taken to Ceylon to trade for staples such as rice, flour, sugar and tea among others. Aishath, a housewife in her 50s, recalls that her grandfather was a boat owner. They had many helpers in the house, but her grandmother would always cook the fish [tuna]. Her grandmother would say “I will do the cooking and processing. After all, this [tuna] is money (*aharen kakkaa thayyaaru kuraanan. mahakee faisaa ennu* | ހަރެއްގެ ކާކާ ތައްޔާރު ކުރާނަން. ފަހަކީ ފައިސާ ޔެއްނު) Aishath, like most others, would always use the term *mas* | ދަށ (fish) meaning tuna.

As tuna was abundant in households, it was the main food source. Most meals on the islands featured tuna in some form, with families often having fish available for every meal of the day. However, fishing activities were specific to the type of fishery being engaged in, such as *farumahah dhiun* | ފަރުމަދަށ ދިއުން (reef fishing) or *landaa nagan dhiun* | ލަދާ ނަގަން ދިއުން (sea cucumber harvesting). More recently, Maldivian fishermen have started going outside the atoll waters to catch yellow fin tuna, reflected in the specific term *bodu kanneyah dhiun* | ބޮޑު ކަނޑުގައި ދިއުން ވާ (going to catch yellow fin tuna). These examples show how fishermen’s interactions have contributed to the development of the terminology used in the fisheries sector. As the main exchanges in terms of fishing was for tuna, going fishing in general has been used to refer to tuna fishery.

In all communities, tuna fishing has declined considerably. Participants recalled how, in previous times, fishermen would leave before dawn and return back to the island late in the afternoon. The fish would be sold on the shore. This time of the day when the fishermen arrived back was an eventful time, with representatives from each household arriving at the beach to purchase their daily fish. People would gut and clean the fish on the shore, throwing the waste into the lagoon before taking their purchases home.

Now tuna fishermen mostly sell to the collector vessels that will take their haul to be processed in larger factories. The fishermen do not typically bring the tuna to the island for cooking, as this is no longer profitable. To increase their catch, fishermen often go on week-long trips to waters beyond their own atoll. To accommodate these changes in fishing priorities, the boats used in these communities have changed, increasing in size and amenities. Changes in fishing practices have impacted island communities, as their main food source has shifted from freshly caught fish to more processed food.

With the decline in tuna fishing, people's interactions within their marine environment became more varied. People on islands E, F, and G interact less with the surrounding marine environment. These islands are larger and more urbanized, with newly emerging tourism opportunities on nearby islands. Here, the selling of fish by local fishermen in these settings, was less interpersonal and had more market transactions. Outward migration to the capital Maale was extremely high in Island F and G. Island B also has a high migration rate, and according to the Counsellor of Island B, "We were a number 1 fishing community in the area. The fishermen of Ihavandhoo [they are renowned fishermen now] even used to go fishing only if our fishermen went. They followed us." However, at the time of data collection, there were no more tuna fishing boats on the island as most of the workforce had migrated to Maale for jobs. There remained only a handful of small boats, which some of the older fishermen would use for trolling. The remaining population on the island were elderly men, women and young children. The men often lived in Maale or in nearby resorts, visiting their families during holidays.

During the holiday season, the usually quiet streets of the islands became crowded as people returned to visit the families they had left behind. These people were originally from the islands but had migrated to Maale in search of better opportunities. During such periods, they would engage in high recreational use of the marine environment including activities such as diving, snorkeling, going on picnics to nearby (uninhabited) islands, and recreational fishing. These recreational activities were relatively new to these communities, practices borrowed

from what the resorts offered visiting tourists. Almost all recreational activities in which people engaged were referred to by their English names (e.g., snorkeling, diving).

An important reef resource for the island communities was fish in the lagoon. The house reef and the sandy beach of the island bound the lagoon. The entire community enjoyed swimming and other recreational activities there. Sometimes, women would take their larger pots and pans to be washed on the beach while their children played in the water. The fish in the lagoon was not used for commercial fishing. It was purely for community use. One of the types of fish typically found in the lagoon was scads. Dense schools of scads were locally referred to as *vehimas* or *mushimadgandu*. These included fish such as mackerel (*mushimas*), bluestripe herring (*gunbalha*) and silversides (*thaavalha*). Large schools of scads enter the lagoon seasonally, with their numbers increasing daily until the "whole lagoon is black (*mulhi moodhu kalhu vefa* | މުޅި މޫދު ކަޅުވެފަ)."

Participants recalled that in the past people were careful with the way in which they used this resource. Even with no formal regulations on resource management in place, the lagoon was not overfished, and people were careful to fish scads of a certain maturity, allowing the young ones to grow to full size. While tuna fishing is considered hard work and was reserved for men, fishing in the lagoon could be done at a leisurely pace by anyone. It was an activity to be enjoyed, and often a way in which children learn fishing. Fish caught in this way was never sold but used for home consumption and shared with family and friends. Many accounts of sharing resources were described by participants. For example, Nizar recalled that in the past, even when there was no money, people had everything they needed. Fish from the sea and produce from the land were always available.

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> If this house gets tuna, all houses get [tuna]. There was no money [involved]. [It was] very easy. No headaches. We found fish. People were much better then. Toddy, banana, screw pine, we get these things. Money causes anger … close friendships, family ties are distanced.

Through these narratives, we see clear expressions of relational values that define traditional life in the islands. Fishing was not just an economic activity – it was an expression of reciprocity, identity, and social cohesion. These traditional relationships described by participants underscore what Whyte (2020) terms relational accountability, where people view

themselves as responsible members of a community that includes human and non-human actors.

However, this close community bond and reciprocal relationships of sharing and gifting resources has changed over time, with a greater focus on monetizing and a focus on material gains. This has affected the utilization and management of natural resources. One participant remarked that the focus had changed from regarding the island and its surroundings as "belonging to us (*aharemenge thaneh* | އަހަރެމެންގެ ތަނެއް)" to one where individuals often aimed to claim things for themselves and their own benefit. Some people may now mine coral and sand mining from other islands or lure fish away from one island's lagoon to another, indicating that their priority is their own benefit rather than the community.

The increasing individualization of resource use reveals a weakening of relational values, as exemplified in the shift from collective to individualized ownership and competition. Recreational uses of marine spaces for snorkeling and diving further point to the commodification of nature through global tourism frameworks, eroding local relational meanings.

Findings related to this theme illustrate the linguistic specificity of fishery terms, suggesting the sophisticated categorization of marine resources grounded in local ecological understanding. The language encodes ecological knowledge about fish species, behavior, habitats, and seasonal patterns. The community's caution in avoiding overfishing certain species before they reach maturity reflects resource stewardship practices rooted in experiential knowledge and a sustainability ethic, which are the key features of TEK (Berkes, 2012). The clear distinctions made between commercial and non-commercial fishing zones and species demonstrate a nuanced ethnoecological understanding of resource classification and sustainable use. These practices are consistent with findings from other small-scale fishing communities, where cultural knowledge systems often guide conservation-oriented behaviors even in the absence of formal governance (Johannes, 2002).

Disconnect from Nature

In addition to the changing reef interactions, one of the recurring themes from all islands is the disconnect between people and nature as a result of changing lifestyles. As people moved en masse to Maale, choosing a city lifestyle, natural surroundings became less important to them. When the same people returned to their islands for short periods of time, their interactions with

the environment showed their diminished understanding of nature and their role in it. We illustrate this here with three examples.

Elders in island communities regarded other living creatures with care and respect. They insisted, for example, that scads also had feelings and were conscious of human behavior towards them. Idris, a man in his 70s, and Mufeed, a man in his 40s, expressed concern that younger people were harming the scads in the lagoon, claiming that just as we are harmed when attacked, the fish would feel pain too.

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The younger generation [harms the scads]. Earlier [people] will not do something like that. … If it is getting beaten, it will not come there.

They will know to some extent. [They] will not come to where [they] are being disturbed.

Their concern was that young people today are unaware of how nature works, and have little regard for other creatures, despite having to rely on their environment for their livelihood. This example illustrates how an inability to understand the human-nature connection has caused young people to devalue other creatures and fail to see the importance of environmental stewardship (Chaplin, et al. 2010).

A second example comes from an observation of a family who was clearly visiting from Maale. Two children, approximately 10 and 12 years old, sat on the *joali* under some *dhiggaa* (sea hibiscus) trees on the beach with their father. The excerpt from their interaction was translated into English as follows.

Father: Do you know what kind of tree this is?

Child 1: Don't know.

Father: Do you want to try a guess?

Child 1: (shrugs, disinterested) Not really.

Father (turning to Child 2): What about you?

Child 2: I don't know either.

Father: Come on. Try. Look at the heart shaped leaves. The red flowers. We see this on every island. I ask you every time.

Child 1: And we never get it right.

Father: Just one guess.

Child 2: Some kind of fruit tree?

Father: Do you see any fruits?

Child 2: No. But maybe they are hiding somewhere.

The *dhiggaa* tree is extremely common, yet despite their father's efforts to engage them, these two children could neither identify it nor were interested in attempting to do so. Living in Maale, they are unlikely to have encountered *dhiggaa* trees in their everyday environment. However, if they visited other islands (as implied by the father's comments), they would have seen these trees that often line the beach.

A third example of the disconnect with nature involves two women in their 20s, Leena and Hawwa, who were seated in a *joali* outside their house. Hawwa was applying a henna design on Leena's palms in preparation for the Eid celebrations the next day. They were using the henna cones that were imported from India. An older woman in her 50s walked past and stopped to observe Hawwa apply the henna paste in intricate designs. After a while, the older woman asked why they were using the packaged henna and not the natural leaves. Both girls were surprised and confused by this question and asked her to clarify what she meant.

> Shareefa: That is henna right? Those imported henna packages must have some additional things added to it, because natural henna doesn't have such a dark color. Natural henna is more reddish or coppery. That is almost black, right?
> Leena: Do you use the natural henna then?
> Shareefa: Yes, always. See my nails? This color is better, right? This is just natural henna leaves that I pick and grind into a paste. Simple.
> Leena: Where do you get your natural henna from? Do they sell it here?
> Shareefa: I don't buy it. Why would I buy it? I just go and pick the leaves off the plant.
> Hawwa: Do we have henna plants here?
> Shareefa: (laughing and pointing to a bushy henna plant across the street). There. Even Jameela's house has it. You find it everywhere.

The girls looked at the plant Shareefa was pointing at. It was clear from the expressions on their faces that they were unaware that the plant in front of their house was in fact a henna plant. Shareefa went on to explain to them how to make a henna paste from fresh leaves.

These examples illustrate how people were disconnected from nature. With urbanization and modernized lifestyles, people felt a reduced need to interact with nature in their everyday lives. They worked at desk jobs and purchased their groceries from shops. The food came in packages and cans and people were unaccustomed to linking the items they purchased in the shop to their original form in the environment.

The associated language also becomes neglected due to the lack of interaction with nature. Being an island nation, the Maldivian vocabulary is rich in terms used to describe the reefs (Mohamed, 2012). Words such as *thoshi, hiri, thila, giri, faru, haa,* and *gaa,* are all names used

for reefs. These terms vary depending on their location within an atoll, distance from an island, and the depths and types of corals in the area. One of the first islands that were visited had a reef surrounding the island. In the first focus group the opening question was, "Is there a reef (*faru*) around the island?" *Faru* is a term used in general to mean a reef. The immediate response from the group of middle-aged people and fishers was 'No, there is no *faru* around the island." This left Mizna bewildered, wondering why they were lying, when there clearly was a reef. But then came the response "No, we have a *thoshi* around the island."

This interaction immediately prompted Mizna to realize and recall words she had learned and once known but had forgotten—highlighting the disconnect caused by living in Maale and researching marine environments from a Western-educated perspective , where the English term *reef* is used to describe all types of reefs. For the locals living on the island, the reef surrounding an island has a specific name *thoshi*, corresponding to the function it provides. The literal meaning of the word *thoshi* means an outer layer or shell such as the bark of trees, the skin of fruits and vegetables and the shell of an egg. The reef surrounding an island provides a protective function similar to an outer shell. This humble reminder provided by the focus group encounter helped us realize that we ourselves were disconnected from the rich language Dhivehi afforded us to describe nature, even as researchers interested in the relationship between humans and nature.

The traditional knowledge of the land, which has developed over time in complex ways, enables people to manage and protect the environment in a reciprocal relationship with the land. With the growing disconnect between humans and nature the respect and care for nature necessary to sustain the environment becomes jeopardized (Oliver et al., 2024). Arbitrary English names to label physical features are insufficient to capture the depth of knowledge that Dhivehi can provide through a single word like *faru*, nor are they needed as a replacement.

Westernized Schooling and Globalized Worldviews

Fishermen and elders in the island communities frequently made references to compass directions in Dhivehi (*uthuru, dhekunu, hulhangu* and *iru*) or made weather predictions based on the local calendar system of *nakaiy* which is a series of 13-14 day periods. To the fishermen and elders, each *nakaiy* determined the activities to prioritize during that period. For example, during the *huvan nakaiy*, seas are expected to be calm and the skies clear. This would suggest that fishing in the east would be good. *Miyahelia nakaiy* brings with it storms, rough seas and strong westerly winds, and traditionally, this is a time for fields to be prepared for new crops.

Traditional knowledge of the *nakaiy* system and its implications for travel, fishing and agriculture was not being passed down to the younger generation. School children were taught the names of the *nakaiy*, but this did not go beyond learning the names. Instead, learning at school prioritized a Western-centric understanding of the world. Rasheeda and Shadiya, two teenage girls from Island B, commented on how their learning in school was far removed from their simple island life. "We learn more about the four seasons in countries where it snows and there is autumn. But very little is taught about our island environment." By examining the locally developed environmental science textbooks used in school, we found that topics such as rainforests, greenhouse gases, deforestation, global weather, and climate change were addressed, while very little information was included about the island environments of the Maldives.

A similar observation emerged during a session with young school children in which we discussed coral reefs. Our young audience was very familiar with types of coral reefs, their biology, the English names and climatic influences. However, none of the children were able to provide information on a nearby reef which is also a famous dive spot. This moment highlighted a concerning trend: in cultivating globally aware citizens who are well-versed in international environmental issues, we may be inadvertently disconnecting them from their immediate surroundings and local ways of understanding the world. From a TEK perspective, this illustrates a breakdown in intergenerational transmission of knowledge, a key mechanism through which ecological wisdom is preserved (Berkes, 2012; McCarter & Gavin, 2011). The displacement of local knowledge with Western scientific paradigms mirrors a broader colonial legacy in education (Mignolo, 2011), whereby what is recognized as "knowledge" is filtered through Eurocentric lenses. This shift not only contributes to the erasure of TEK in favor of globalized knowledge but also reflects a rupture in relational values. When children are not given opportunities to engage with nature through local practices, their affective ties to land and sea are severed. This issue is significant, given that relational values are not only motivation for conservation but also a foundation for cultural sustainability (Whyte, 2020).

There remains an obvious lack of appreciation for the ways in which TEK can offer deeper insights into local environmental issues and support meaningful conservation and sustainability efforts (Urzedo & Robinson, 2023). As Chiblow and Meighan (2022) emphasize, an intimate knowledge of the land and ecology is embedded in the languages of Indigenous Peoples. In the Maldivian context, the mental, emotional, and spiritual depth that Dhivehi and local knowledge can bring to the environmental understanding has been eroded by viewing it from a colonial

lens. Given the Maldives' high vulnerability to climate change, it is crucial to recognize, value, and incorporate Indigenous knowledge systems into environmental management strategies.

Saeed (2003) discusses the shift from traditional learning to a Western-style curriculum in the Maldives, contrasting her education in the capital with what was taught in the islands. She recalls that in the 1980s, she learned about the World Wars, the French and American Revolutions, the savannas of Africa, and the Prairies of North America, yet was never taught the geography or history of the Maldives. Whatever local knowledge was taught, was at a surface level, much like what a world encyclopedia might contain (Mohamed, 2012). Fishing is a major livelihood activity of Maldivians and can be an excellent way to teach students about local environments. However, the local fishing tradition is taught as the 'Fishing Industry', with just a focus on its economic contribution to the nation's GDP. This focus on global issues and the omission of an in-depth study of the local environment contributes to the erosion of traditional ecological knowledge and the associated loss of vocabulary.

Language Shift to English

Previous research on the language use of children and young people in the Maldives, focusing especially on participants based in Maale, has shown that the Maldivian society is in a state of language shift (Mohamed 2016, 2020, 2022, 2024), with young people regarding English as essential for their future success. Our findings echo the aforementioned research , as participants associated English with prestige and status, while viewing Dhivehi as a language that might hold them back. We illustrate this with three incidents from our observations.

During a large family gathering of nearly fifty people from three generations, people enjoyed food and conversation on the beach. Most of the adults were seated on mats while children of all ages were playing with sand toys or grouped together over a teenager with an iPad. They were watching American music videos on the device. The excerpt below is part of a conversation between a teenage boy (Zain), his mother (Laila), and two of his slightly younger cousins (Nuh and Yunus).

> Laila: Zain, *aadhey kaan*. *Adhi dharifulhu nukamennu*.
> Zain continues watching his video, ignoring his mother.
> Laila: Zain, come and eat.
> Nuh (nudges Zain): Bro, your mum is calling.
> Zain: I don't want to eat.
> Laila: *Koacheh dheynvee dharifulhaa*? Plate *eh genes dhen tha*?
> Zain: I don't want that stuff.

Laila: Nuh and Yunus – what do you want to eat?
Yunus: I want cake. Can I have cake?
Laila: *Aan aadhey. Mihiree.* Come.

All three boys in this excerpt spoke in English. Throughout the observed conversation, Zain's mother's Dhivehi was punctuated with English when directed towards young people. In her exchanges with other adults, she spoke only Dhivehi. In addition to the English-medium education children received in school, they were constantly exposed to English through the media they consumed.

Two children and their mothers were talking about their weekend activities in a different setting. Again, it was observed that the children conversed in English while the parents used Dhivehi.

Maryam: Mummy can I go to Aisha's house?
Mother of Maryam: *Miadhu*?
Aisha: Yea it's like tomorrow is a holiday.
Mother of Aisha: *Aan maadhan hukuru dho*.
Aisha: Exactly

This short excerpt is typical of the patterns of language use we observed in all of the settings. One parent, who tried to talk to his daughter in Dhivehi, was asked by his friends why he and his wife did not speak English to their daughter. Many young parents believed that speaking in English to their children prepared them for success in school and life. They considered it a status symbol to show how educated their children were: "*English in vaahaka dhekeema varah molhuhen heevanee*." Another parent explained that teachers in schools encouraged students to speak in English and noted that those students who spoke well in English were often selected for leadership positions.

The language shift observed in these communities caused considerable communication challenges across generations as grandparents typically did not speak English. Children struggled to perform simple tasks like counting and telling time in Dhivehi, as these were all learned in English while grandparents' interactions with their grandchildren were often stilted and superficial. When English becomes the default language in homes, children's ability to form meaningful relationships with elders is compromised. These intergenerational gaps are not just linguistic; they represent a loss of affective ties and shared cultural knowledge, especially knowledge tied to place and ecology. The privileging of English mirrors the

workings of colonialingualism (Meighan, 2022), the internalized linguistic hierarchy evident in our participants' discourse and behaviors.

Family experiences in these communities are reminiscent of the studies by McCarty et al. (2006), who did extensive research in Navajo communities, and Bishop's (2011) work with Māori children in New Zealand. Although their studies were in English-dominant contexts, and our research in a largely homogenous setting, "the politics of shame and caring in school, the hegemony of English" (McCarty et al., 2006, p. 37) as well as the bonding of English with success was ever present. Bishop (2011) notes how Māori students struggled with their identity when they were viewed from a deficit lens; and how their motivation to align themselves more closely with English was fueled by a desire to be seen in a more positive light. Similarly, the young Maldivians in this study desired to be seen as fluent English speakers, because without English, they (nor their parents) could see themselves succeed. Their choice to shed their Dhivehi identity and Dhivehi worldview can be associated with the inability to cultivate a respect for their language and cultural ways of knowing.

As the findings reveal, language shift is an immediate concern arising from the disconnect between people and the natural environment. Urbanization, migration from rural to urban centers, and changes in livelihood activities from fishing to tourism have all contributed to this disconnect. It directly ruptures local ways of knowing and a loss of TEK among younger generations.

The changes observed in these communities are not just a matter of language preference but part of a broader epistemic transformation. Children are not only learning a new language. Along with language acquisition, young people are adopting new values, identities, and ontologies that align with global, Western norms at the expense of local ones. This fact has critical implications for cultural sustainability, environmental stewardship, and intergenerational cohesion.

To address these challenges, it is vital to revalue Dhivehi not only as a tool for communication but also as a means of accessing traditional knowledge and building stronger cultural connections. Educational policy and family practices must work to restore Dhivehi's status and relevance and integrate local ecological knowledge meaningfully into learning environments. This is especially crucial in the context of climate vulnerability, where Indigenous and place-based knowledges offer invaluable insights for environmental resilience.

Previous work (Mohamed & Mohamed, 2021) highlighted the significant focus on cultivating Maldivian identity and valuing local heritage in the National Curriculum. Yet, questions arise regarding the translation of these policies into teacher education programs and classroom pedagogy. There is a clear need to redesign schooling and teacher education to foreground local knowledge and immersive, place-based pedagogy (Gruenewald, 2003) and incorporate relational learning modalities. These modalities could include learning through doing, storytelling, observation, and guided participation, all of which are central to TEK systems (Roth, 2009).

CONCLUSION

This paper focused on the interrelationships between language, land, and knowledge in how island communities in the Maldives interact with their marine environment. Our findings reveal the vulnerability of traditional knowledge if the community's language is not maintained for future generations. The growing disconnect with nature is mirrored in the increasing detachment from Dhivehi, as young Maldivians are drawn to more human-centered Western worldviews where English is seen as their passport to success.

Our study highlights the urgent need to reconsider what counts as knowledge and who decides. In the face of climate change, ecological degradation, and cultural homogenization, the integration of TEK, relational values, and ethnoecological perspectives in education is not merely symbolic – it is vital for resilience, justice, and sustainability. We call on policy makers and educators to teach language and science in ways that do not diminish the Indigenous languages of the community and is respectful to their ways of making sense of the world.

Beyond the research context explored here, our findings are of broader significance as they indicate the centrality of language in environmental sustainability. Language serves not only as a means of communication; it is also an identity marker and an expression of deeply held value systems. While we acknowledge the need for further research to explore these connections, this study suggests that the fate of our biological diversity is closely tied to our linguistic and cultural diversity. We hope that this study can inspire future investigations into how the knowledge encoded in language can strengthen cultural identity and enhance sustainability efforts.

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