

¿Proteges o vendes lo sagrado?

DERECHOS de la NATURALEZA utilizados para BONOS de BALLENAS



Con buenas intenciones, algunos Pueblos indígenas, comunidades y ambientalistas esperan que los Derechos de la Naturaleza puedan servir para proteger la naturaleza. Sin embargo, los Derechos de la Naturaleza están siendo utilizado para convertir a los territorios de los Pueblos Indígenas y sus animales sagrados en bonos de carbono y biodiversidad. De hecho, los comerciantes de los de carbono admiten que otorgar los Derechos de la Naturaleza, incluyendo la personalidad jurídica, es el primer paso¹ en vender la naturaleza, y poner precio² y código de barras³ en las ballenas como bonos de carbono, que está⁴ basado en el colonialismo⁵ de REDD.⁶

Desde 2023, los esfuerzos por consagrar la personalidad jurídica de las ballenas⁷ en el derecho internacional en la Asamblea General de las Naciones Unidas⁸ y las cumbres sobre cambio climático⁹ han sido liderados por el Dr. Ralph Chami, quien en 2019, como economista del Fondo Monetario Internacional (FMI) inventó los bonos de ballenas.¹⁰ Dr. Chami fue co-fundador de Blue Green Future,¹¹ que es un socio, junto con la minera Baffinland Iron Mines Corporation, del proyecto Carbono de Ballenas Plus.¹² Según Dr. Chami, lograr la personalidad jurídica de las ballenas es el primo paso¹³



en poner una etiqueta de precio de \$3 millones en cada ballena como bonos de carbono;¹⁴ haciendo seguimiento a las ballenas con el Inteligencia Artificial;¹⁵ permitir a las “entidades privadas, ONGs y gobiernos” privatizar los “servicios”¹⁶ de las ballenas como “capital natural,”¹⁷ acciones¹⁸ y propiedad privada,¹⁹ y vender esos seres hermosos y sagrados para mucho dinero en los mercados financieros y de carbono.²⁰ El capitalismo pretende ganar miles de millones²¹ al vender la “Naturaleza Viva”TM²² y convertir a las ballenas en esclavos del lavado verde y greenwashing de las empresas contaminadoras.



Si siguiendo la línea del Dr. Chami,²³ el uso de los Derechos de la Naturaleza para bonos de ballenas está siendo introducido mediante una asociación entre: ²⁴ 1) Un megaproyecto de bonos de ballenas de la ONG grande Conservation International y de unos Iwi Māori²⁵ llamado la Hinemoana Halo Ocean

Bonos de Ballenas = GREENWASHING

Un bono de carbono está basado en el carbono de dióxido absorbido por el cuerpo de una ballena, lo que otorga a los contaminadores un permiso para contaminar. Es una falsa solución a la emergencia climática que acelera la extinción de las ballenas.

Initiative,²⁶ que es parte del Decenio del Océano de las Naciones Unidas;²⁷ 2) el programa Más de la Vida Humana (MOTH) de la New York University, que está construyendo marcos jurídicos para los Derechos de la Naturaleza²⁸ y la “traducción” de las ballenas con Inteligencia Artificial;²⁹ y 3) el Proyecto CETI (Iniciativa de Traducción Cetácea), que emplea la IA para supuestamente traducir la comunicación de las ballenas.³⁰ De este modo, las Ballenas y los Pueblos Indígenas³¹ vuelven a ser el símbolo mundial del colonialismo de carbono y la privatización de la naturaleza, justificada por la “traducción” de las ballenas por la IA y bajo mandato de los Derechos de la Naturaleza. ¡Caray!

Hinemoana Halo: ¿Bonos de ballenas, despojo del océano y EXTRACTIVISMO?

Hinemoana Halo es un enorme prototipo de un programa de bonos de ballenas,³² que abarca las rutas migratorias de las ballenas, las zonas costeras, el alto mar, y los territorios de los Pueblos Indígenas.³³ Es 15 veces más grande que el tamaño de Aotearoa/Nueva Zelanda.³⁴ Eventualmente, podría ser replicado en todo el Pacífico, (“el sumidero de carbono” más grande sobre la tierra)³⁵ y también en el Ártico.³⁶ En *Hinemoana Halo: Māori-led Ocean Solutions and Nature Positive Carbon++ Investments*, Dr. Chami y Mere Takoko, vicepresidente del Conservation International Aotearoa, explican que “la economía del Carbono Azul”³⁷ del

Hinemoana Halo vendrá “**créditos de carbón y de biodiversidad**” combinados con “**créditos culturales**” en el “**blockchain**.”³⁸ Según la Ocean Iniciativa Hinemoana Halo, los **bonos azules** “promoverán el financiamiento de las **Soluciones Basadas en la Naturaleza** incluyendo: ... **EL DESARROLLO DE INDUSTRIAS**, incluyendo:... **LA ENERGÍA**”³⁹ (que podría ser pozos de **petróleo y gas**, los proyectos geotérmicos, así como las turbinas del mar y de viento)... y “las tecnologías de CDR” de la **eliminación de dióxido de carbono**.⁴⁰ La CDR⁴¹ abarca una gama de soluciones falsas a la emergencia climática con base en el mercado de carbono, incluyendo la peligrosa⁴² **Captura directa y Almacenamiento del Carbono en el Mar**.⁴³ La Propuesta Hinemoana Halo Seed Funding incluye una ilustrativa “Revista del **Mercado de Bonos/Crédito**,”⁴⁴ que muestra los “Posibles **Compradores de Crédito** (demanda):” **Empresas contaminadoras** como la aerolínea **Delta Air Lines**, Amazon, Disney, Walmart y Patagonia; el **Banco Mundial** y bancos privados, así como los gobiernos de EEUU y **Europa**;⁴⁵ Posibles “**Facilitadores**”: **verificadores de créditos de carbón** como Verra, ONGs como CONservación, empresas de tecnología, y universidades como Stanford y Yale;⁴⁶ y posibles “**otorgadores de créditos** (suministro):” países y ONGs.⁴⁷ La IUCN puede ayudar acreditar a los créditos.⁴⁸

Como Hinemoana Halo, algunos **Canjes de Deuda Externa por Naturaleza** incluyen el carbono azul y bonos azules.⁴⁹ Por ejemplo, en 2023, Ecuador **reestructuró parte de su deuda**⁵⁰ con base en la **Economía Azul** y **la conservación de ballenas** en las Islas Galápagos,⁵¹ y la venta de bonos azules.⁵² Arreglados mediante negociaciones secretas con la FMI y otros prestadores,⁵³ los Canjes de Deuda por Naturaleza con frecuencia están vinculados a los mercados de carbono⁵⁴ y la militarización;⁵⁵ amenazan la soberanía nacional,⁵⁶ y socavan los derechos, la jurisprudencia y los territorios de los Pueblos Indígenas.⁵⁷ De hecho, es posible que los Canjes Deuda por Naturaleza sean el **motivo** por lo cual el **FMI**, el **prestamista usurero del mundo**, asumió el liderazgo con respecto a los **bonos de ballenas**.⁵⁸



Roquin-Jon Quichocho Siongco

Bonos de ballenas podrían ser lavado verde para la minería de aguas profundas? En la cumbre la ONU sobre la diversidad biológica de 2024, Roquin-Jon Quichocho Siongco del Pueblo Chamoru de Guåhan (Guam) con la Alianza de Micronesia sobre el Cambio Climático preguntó si **los bonos de ballenas podrían “fingir de actuar como compensación para la devastación extensiva causada por la minería de aguas profundas.”**⁵⁹ Es interesante que el Dr. Gregory Stone, ex-Científico Jefe para Océanos y Vicepresidente Ejecutivo de Ocean Conservation International,⁶⁰ que es uno de los principales estrategas del mundo sobre la Economía Azul,⁶¹ ahora es el Científico principal para océanos de The Metals Company, que es un líder en la minería de aguas profundas.⁶²

El movimiento de los Derechos de Naturaleza debe rechazar los Bonos de Carbono

Según el agrónomo y activista por los derechos indígenas Alejandro Argumedo del Pueblo Quechua, “el camino adelante **no es de pedir al sistema colonial a otorgar ‘derechos’ a nuestra Madre Tierra**. El verdadero camino es de exigir que los derechos de los Pueblos Indígenas sean reconocidos...La seguridad del bosque, del mar y de la **red sagrada de la vida no se encuentra en la sala de justicia**. Está en las manos del **pueblo** que forma parte de esta red de vida,” y que tienen “**DEBERES SAGRADOS**” hacia “**SERES SAGRADOS**.”⁶³ Como se han escrito los expertos de la India Ashish Kothari y Shrishtee Bajpai: “si los movimientos por los Derechos de la Naturaleza no cuestionen la **hegemonía de los estados-nación** y las **corporaciones**, y las bases patriarcales sobre las cuales están asentadas, hay peligro de caer en la **trampa** del...**enfoque neocolonial** [con su base en el **despojo de tierras y del océano para créditos**] ... como, por ejemplo, la **Half Earth**, ‘**30X30**,’ ‘**Soluciones B la Naturaladas**’ o el ‘**Net-Zero**.’ Estos sirven como **lavado verde** para la **esquizofrenia deliberada** de continuar el ‘**negocio como siempre**’ **extractivo y explotadora** mientras pretende **hablar por parte de la naturaleza**, y **marginalizar a pueblos y comunidades** que co-existen con ... la naturaleza”.⁶⁴

Despojo de tierras, océanos y colores

La Economía de Carbono “Azul” es el color de un derrame de petróleo y de la extinción de las ballenas. De la misma manera, la Economía “Verde” es el color del humo saliendo de las chimeneas de las empresas contaminadoras que los bonos de carbono no se reduzcan, y de la sangre de los muertos.⁶⁵ Al contrario, el azul y el verde son los colores de los océanos majestuosos y de los bosques exuberantes. ¡Devuelve la tierra! ¡Devuelve el océano! ¡Devuelve los colores! No bonos de carbono! **¡SALVEMOS a las BALLENAS... del mercado del carbono! ¡Protejamos el sagrado!**

All references accessed January - March 2026. All translations unofficial.

¹ Ralph Chami *et al.* Building markets for a nature-positive world: a triple win strategy. February 22, 2024.

<https://illuminem.com/illuminemoives/building-markets-for-a-naturepositive-world-a-triple-win-strategy>

“For markets to develop around this ‘new’ nature asset class, however, a new plan of action is badly needed.

The strategy – step-by-step

1) Legal – change the rules. Establish legal standing for living nature – either through designating them as assets and establishing provenance, or by endowing them with rights through legal personhood – these assets/legal persons then become “visible” to the market...

Returning to the case of the whale and ships, we can now see that by recognizing legal personhood for the whale – it becomes a legal entity with rights and legal standing if harmed (Step 1). Economic valuation for the services of whales establishes a financial recourse in case of harm to the whale (Step 2).”

² DW Planet A. YouTube. How much is a whale worth?. 2024. <https://www.youtube.com/watch?v=MSxIBYOMQOU> See graphic of price tag on whale.

47 seconds Narrator: “Putting a price tag on something priceless: Life itself.”. 6:56 minutes Minnie Degawan: “There is an ethical dilemma for communities to say that we will get monetary benefits from standing forests, when we have always looked at the forest as a living ecosystem. How do you put a value, for instance, on the fact that these forests are the resting ground of our ancestors?” 7:31 Narrator: “Carbon markets also allow companies to continue business-as-usual.” 8:27 June Rubis of ICCA Consortium: “Land owners are incentivized to plant non-native plant species, instead of indigenous species because it creates a new type of landscape that could bank carbon faster. Critics have used terms like carbon colonialism to describe this new wave of capture and enclosure of Nature by capital.” 11:33 Narrator: “In the end, we are relying on market mechanisms which are exactly what got us in this mess in the first place.”

Terra Mater, YouTube, How Whales Can Help Us to Fight Climate Change | Climate Heroes. 2019.

<https://www.youtube.com/watch?v=rYBwHnz-vZE>

24 seconds “Recently, however, the humpback whale gained a new feature: a price tag...”

Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025.

³ Blue Institute. What price a whale? Blue Institute Director champions a new economic paradigm. February 25, 2024. See graphic of whales with barcodes.

<https://blueinstitute.sc/what-price-a-whale-blue-institute-director-champions-a-new-economic-paradigm/>

⁴ Ralph Chami *et al.* Building markets for a nature-positive world: a triple win strategy. February 22, 2024.

<https://illuminem.com/illuminemoives/building-markets-for-a-naturepositive-world-a-triple-win-strategy>

⁵ No REDD in Africa Network. Stopping the Continent Grab and the REDD-ification of Africa. 2015.

<https://no-redd.com/wp-content/uploads/2016/11/REDDinAfricaNetwork.pdf>

“The worst form of slavery is to willingly offer yourself on the auction block, get bought and pretend you are free. This is what participation in the mechanism called Reducing Emissions from Deforestation and forest Degradation (REDD) is. This publication by the No REDD in Africa Network aims to demystify REDD and REDD-type projects, and all their variants, and show them for what they are: unjust mechanisms designed to usher in a new phase of colonization of the Africa continent. From examples presented, it is clear that REDD is a scam and the polluters know that they are buying the “right” to pollute. The No REDD in Africa Network warns that REDD may be the ultimate wedge to crack open the door for the invasion of the African continent with genetically modified crops and trees. Furthermore, REDD threatens to take over soils, water (blue carbon) and entire eco-systems. It may also rekindle the culture of colonial plantation agriculture infamously called ‘cash cropping’. In Africa, REDD is emerging as a new form of colonialism, economic subjugation and impoverishment, and must be stopped.”

Global Alliance against REDD <https://no-redd.com/>

⁶ International Monetary Fund. Ralph Chami *et al.* Nature’s Solution to Climate Change - A strategy to protect whales can limit greenhouse gases and global warming”. 2019.

<https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami>

“ And international organizations have implemented programs such as Reducing Emissions from Deforestation and Degradation (REDD) that fund the preservation of carbon-capturing ecosystems. Adapting these initiatives to support international efforts to restore whale populations could lead to a breakthrough in the fight against climate change.”

⁷ Ocean Vision Legal. Michelle Bender. Whale Personhood in the Pacific and Beyond – Can Whales be a Legal Person? August 6, 2024.

https://www.oceanvisionlegal.com/post/whale-personhood-part1?trk=public_post_comment-text

⁸ Te Ao News. Aroha Mane. Māori leaders propose protecting whales in international waters at UN General Assembly. September 17, 2023.

<https://www.teaonews.co.nz/2023/09/18/maori-leaders-propose-protecting-whales-in-international-waters-at-united-nations-general-assembly/>

⁹ AP. COP28: Give the Whale a Seat at the Table. November 28, 2023.

<https://www.apmultimedianeewsroom.com/multimedia-newsroom/cop28-give-the-whale-a-seat-at-un-table-cr>

¹⁰ International Monetary Fund. Ralph Chami *et al.* Nature’s Solution to Climate Change - A strategy to protect whales can limit greenhouse gases and global warming”. 2019.

<https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami>

¹¹ Initially, Blue Green Future <https://bluegreenfuture.org/> was called Blue Green World, whose name and logo appear as partners of the Whale Carbon Plus Project on Whale Seekers website. <https://www.whaleseeker.com/post/the-whale-carbon-plus-project> However, as the *Scientific American* article indicates, by April 2023, Blue Green World had become Blue Green Future. <https://www.scientificamerican.com/article/can-putting-a-price-on-a-whale-save-the-environment/> Partanna. Our Team. Ralph Chami. <https://partanna.com/our-team/ralph-chami>

"He has co-founded two entities working on bringing this new paradigm to life – Blue Green World and Rebalance Earth that are engaged in realizing the value of the natural world to our well-being and integrating it into our economic system."

Whale Seeker. The Whale Carbon Plus Project. <https://www.whaleseeker.com/post/the-whale-carbon-plus-project>

"WCPP Partners: Blue Green World, Fisheries and Oceans Canada, Baffinland, Whale Seeker, Whale and Dolphin Conservation"

Scientific American. Andrew Chapman. Can Putting a Price on a Whale Save the Environment?. April 24, 2023.

<https://www.scientificamerican.com/article/can-putting-a-price-on-a-whale-save-the-environment/>

"If you have a price of zero on something, then people take it for granted and completely abuse it," says Connel Fullenkamp, a Duke University financial economist and co-founder of **Blue Green Future**, one of the organizations participating in this effort, called the **Whale Carbon Plus Project**." *[Emphasis added]*

¹² Whale Seeker. The Whale Carbon Plus Project. <https://www.whaleseeker.com/post/the-whale-carbon-plus-project>

"WCPP Partners: Blue Green World, Fisheries and Oceans Canada, Baffinland, Whale Seeker, Whale and Dolphin Conservation"

<https://www.scientificamerican.com/article/can-putting-a-price-on-a-whale-save-the-environment/>

"If you have a price of zero on something, then people take it for granted and completely abuse it," says Connel Fullenkamp, a Duke University financial economist and co-founder of Blue Green Future, one of the organizations participating in this effort, called the Whale Carbon Plus Project."

¹³ Ralph Chami *et al.* Building markets for a nature-positive world: a triple win strategy. February 22, 2024.

<https://illuminem.com/illuminemoives/building-markets-for-a-naturepositive-world-a-triple-win-strategy>

"For markets to develop around this "new" nature asset class, however, a new plan of action is badly needed.

The strategy – step-by-step

1) Legal – change the rules. Establish legal standing for living nature – either through designating them as assets and establishing provenance, or by endowing them with rights through legal personhood – these assets/legal persons then become "visible" to the market...

Returning to the case of the whale and ships, we can now see that by recognizing legal personhood for the whale – it becomes a legal entity with rights and legal standing if harmed (Step 1). Economic valuation for the services of whales establishes a financial recourse in case of harm to the whale (Step 2)."

Terra Mater, YouTube, How Whales Can Help Us to Fight Climate Change | Climate Heroes. 2019.

<https://www.youtube.com/watch?v=rYBwHnz-yZE>

¹⁴ Sustainability Unlocked. Ralph Chami. Video: What is the carbon value of a whale?.

<https://sustainabilityunlocked.com/videos/what-is-the-carbon-value-of-a-whale>

"Wild animals, especially whales and elephants, play instrumental roles in carbon sequestration, with values reaching \$3 million per whale based on their carbon offset contributions."

¹⁵ Ralph Chami *et al.* Building markets for a nature-positive world: a triple win strategy. February 22, 2024.

<https://illuminem.com/illuminemoives/building-markets-for-a-naturepositive-world-a-triple-win-strategy>

"The strategy – step-by-step... 4) Innovation – Develop and deploy technology and innovation designed around the monitoring and protection of these new natural assets."

Blue Green Future. Our Approach. <https://bluegreenfuture.org/our-approach/>

"The Role of Technology: Coalition members use cutting edge science tools to monitor living ecosystems. Light detection, underwater sensors, AI-powered satellite analysis, and even shark-mounted cameras (used to map seagrass in the Bahamas) all contribute to a holistic understanding of nature's ecosystem services."

Blue Green World, a precursor of Blue Green Future is a partner along with Baffinland Iron Mines Corporation and Whale Seeker, of the Whale Carbon Plus Project, which uses AI to track whales.

Blue Green Future. "Advisors & Consultants. Emily Charry Tissier. Global Advisor on AI for Oceans... Co-founder & CEO of Whale Seeker pioneering AI-powered whale detection tools; led the company to become the first Certified B Corporation using AI for wildlife."

Baffinland Iron Mines Corporation. BAFFINLAND TO MONITOR AND PROTECT WHALES IN INNOVATIVE NEW CARBON CAPTURE PROJECT. 2022.

<https://baffinland.com/about-us/our-blogs/baffinland-to-monitor-and-protect-whales-in-innovative-new-carbon-capture-project>

"In keeping with our core value of Environmental Stewardship, Baffinland is partnering with Whale Seeker, a Canadian company that uses aerial surveillance, satellite technology and **ethical AI to monitor whales**, with the goal of creating a market-ready **whale carbon credit system**." *{Emphasis added}*

¹⁶ Sustainability Unlocked. Ralph Chami. Summary of Video: What is the carbon value of a whale?.

<https://sustainabilityunlocked.com/videos/what-is-the-carbon-value-of-a-whale>

"This involves introducing **financial assets based on natural services, letting private entities, NGOs, and governments trade claims on these services.**

Governments would initially hold these claims, with investors aiming to profit from them. While profits could be monetary, they could also be in the form of **carbon credits**, incentivising carbon **emission offsets**." *[Emphasis added]*

¹⁷ TED. Ralph Chami. https://www.ted.com/speakers/ralph_chami

"He's developed a novel way to tackle both climate change and biodiversity loss: namely, to reposition species such as whales and elephants as crucial allies in the quest to sequester carbon, secure climate-resilient ecosystems and generate income for local communities... Chami advocates for integrating **natural capital** into our economy, bringing together investors, conservationists and policymakers." *[Emphasis added]*

¹⁸ Sustainability Unlocked. Ralph Chami. Summary of Video: What is the carbon value of a whale?.

<https://sustainabilityunlocked.com/videos/what-is-the-carbon-value-of-a-whale>

"Wild animals, especially whales and elephants, play instrumental roles in carbon sequestration, with values reaching \$3 million per whale based on their carbon offset contributions. Additionally, marine vegetation, like seagrasses, offer invaluable services, cumulatively worth over \$1 trillion. Despite their crucial roles, our economic system fails to adequately value them. To bridge this gap, we should integrate these natural services into financial markets, creating tradable assets."

Business Insider. Mariel Loveland. What Are Commodities?. <https://www.businessinsider.com/personal-finance/investing/what-are-commodities>

"Commodities are publicly traded tangible assets, agricultural products, and natural resources used in commerce and trade."

¹⁹ Legal Clarity. What is considered private property?. January 28, 2026. <https://legalclarity.org/what-is-legally-considered-private-property/>

"Private property is a legal term for assets owned by people, groups, or businesses."

²⁰ Ibid.

Ocean Sustainability. Ralph Chami *et al.* How legal personhood and markets can partner to help save the whale. 2024.

<https://www.frontiersin.org/journals/ocean-sustainability/articles/10.3389/focsu.2024.1454751/full>

²¹ Reuters. Peyton Fleming. "Wall Street urged to back Indigenous peoples as protectors of forests and oceans". October 5, 2023.

"The 'nature credits' industry is calculated to reach \$40 billion by 2050."

<https://www.reuters.com/sustainability/land-use-biodiversity/wall-street-urged-back-indigenous-peoples-protectors-forests-oceans-2023-10-05/#:~:text=Wall%20Street%20urged%20to%20back%20Indigenous%20peoples%20as%20protectors%20of%20forests%20and%20oceans,-By%20Peyton%20Fleming&text=Industry%20Insight%20from%20Ethical%20Corporation%20Magazine%2C%20a%20part%20of%20Thomson%20Reuters.&text=October%205%20%20The%20global%20movement,momentum%20in%20the%20past%20year.>

²² Blue Green Future. Valuing a Living Nature™ for a Blue Green Future. [Home - Blue Green Future](https://www.bluegreenfuture.org/)

²³ Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025.

"Part 6. Carbon Science & Finance Technical Leaders. Ralph Chami.

PART 6

Carbon Science & Finance Technical Leaders



RALPH CHAMI *Ralph Chami | Speaker | TED*
Financial Economist
Assistant Director, International Monetary Fund

CARLOS M. DUARTE *Carlos M. Duarte | Speaker | TED*
Distinguished Professor, Marine Science
King Fahd University, Saudi Arabia

Financial economist Ralph Chami is an assistant director at the International Monetary Fund (IMF) and the cofounder of Blue Green Future and Rebalance Earth. He's developed a novel way to tackle both climate change and biodiversity loss: namely, to restoration species such as whales and elephants as crucial allies in the quest to sequester carbon, secure climate-resilient ecosystems and generate income for local communities. Chami advocates for integrating natural capital into our economy, bringing together investors, conservationists and policymakers.

Carlos M. Duarte is working to rebuild the abundance of marine life by 2050. Following his research showing mangroves, seagrasses and salt marshes to be globally relevant carbon sinks, he developed the concept of "blue carbon" as a nature-based solution to climate change. He has conducted research across all continents and oceans, from inland to near-shore and the deep sea, from microbes to whales. He has published more than 800 scientific papers and has been ranked as one of the most influential scientists in the world, receiving many international honours and awards for his research.

Arctic Circle. Mere Takoko, Vice President, Conservation International Aotearoa and Ralph Chami, Co-Founder, Blue Green Future. Hinemoana Halo: Māori-led Ocean Solutions and Nature Positive Carbon++ Investments. October 9, 2023.

<https://www.arcticcircle.org/journal/hinemoana-halo-maori-led-ocean-solutions-and-nature>

"The project is supported by blue carbon scientist Dr Carlos Duarte and former Assistant Director of the International Monetary Fund, Dr Ralph Chami."

Blue Green Future. Portfolio. Hinemoana Halo Initiative https://bluegreenfuture.org/portfolio_page/hinemoana-halo-initiative/

"Blue Green Future is honored to be working with Indigenous Māori and Conservation International to realise the economic and ecological value of Aotearoa's waters by bringing together science and mātauranga Māori to evolve a five-year action plan with Iwi/Māori partners to direct blue bond financing and investment into eligible projects across Aotearoa's high seas and coastal waters. As part of this work, we are looking to develop markets for the services of natural capital and provide valuations of natural assets based on their carbon sequestration and other co-benefits."

²⁴ Instagram. Hinemoana Halo has entered into a groundbreaking partnership with legal experts at the @mothrights Program at New York University and whale communication scientists at @ProjectCETI. 2026.

²⁵ Conservation International Aotearoa. Mere Takoko, Jasmine Kaa and Linda Bercusson, Hinemoana Halo Ocean Initiative. Section Moana.

"The Hinemoana Halo initiative aims to promote the valuation of ecosystem services performed by whales in Oceania."



Section 4
Valuing our Moana

The Hinemoana Halo initiative aims to promote the valuation of ecosystem services performed by whales in Oceania and to generate a source of funding for Pacific Island governments and communities to conserve and care for the breeding grounds of migratory great whales.

The logistics and costs required to implement an effective regime continues to be a challenge across the Pacific Ocean, which covers approximately 63.8 million square miles and spans 22% of the total surface of our blue planet.

Humpback whales
Migratory interchange from Aotearoa to Antarctic

The warm tropical waters of the South Pacific are an important breeding ground for whales.

Hinemoana Halo. <https://www.whaledeclaration.com/declaration>

"The He Whakaputanga Moana Whale Legal Personhood Declaration document belongs to Hinemoana Halo." <https://www.whaledeclaration.com/about>

He Whakaputanga Moana (Declaration for the Ocean)

https://static1.squarespace.com/static/697be4aa5f7dbc2919c2eb27/t/69825ea4fe6bda7370ff4d49/1770151589031/Declaration_Embargoed.pdf

"Innovative financing mechanisms, such as **whale biodiversity credits, payments for ecosystem services** or levies on commercial activities... Scientific and mātauranga Māori research on the role of whales and their impact on carbon and ecosystem services throughout the trophic food chain, to advance metrics used for protection, biodiversity, and nature credits." [*Emphasis added.*]

Conservation International Aotearoa. Mere Takoko, Jasmine Kaa and Linda Bercusson, Hinemoana Halo Ocean Initiative.

"The Hinemoana Halo initiative aims to promote the valuation of ecosystem services performed by whales in Oceania."

"Recognising our regional ocean assets The Hinemoana Halo Initiative will undertake biodiversity assessments and a valuation of ecosystem services performed by whales in the Pacific to explore the socio-economic benefits of using natural ocean systems to reduce the risks of climate change."

"A Blue Carbon Economy for the Pacific, 'When it comes to saving the planet, one whale is worth thousands of trees.' Ralph Chami, International Monetary Fund. Assistant Director at the International Monetary Fund's Institute for Capacity Development and Blue Green Future co-founder, Ralph Chami estimates that over the course of their lifetime, a great whale sequesters approximately 33 tons of CO₂, equivalent to 30,000 trees, and estimates that if whales were to return to their former abundance, they could capture approximately 1.7 billion tonnes of CO₂ annually, a carbon sequestration service worth \$13 per person per year... Considerable interest over the past decade has been devoted to understanding the potential of blue carbon ecosystems, and to provide a range of co-benefits to humanity. To date, many western-led scientific bodies have largely focused on seagrass meadows, saltmarshes, and mangroves. Recently, however, there has been a growing appreciation among Indigenous peoples and scientists within the Pacific region, of the economic potential that the recovery of whale populations and other taonga species. In the Sixth Assessment Report of the International Panel on Climate Change (2022), whales were proposed as potential blue carbon ecosystems because a living whale sequesters a large amount of carbon over a long lifespan, and when it dies, it sinks to the seabed where that carbon is transferred to a host of other creatures that feed on the carcass. Additionally migratory whales provide a rich source of iron and nitrogen in their excrement which they transfer from rich Antarctic waters to impoverished tropical waters, sparking phytoplankton blooms that absorb carbon dioxide from the atmosphere."

IPCC. Sixth Assessment Report, Box 3.4 | Blue Carbon Ecosystems. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter03.pdf.

"Other ocean and coastal taxa, including rooted or floating macroalgae (e.g., non-vascular multicellular kelp or seaweed genera such as *Macrocystis* spp., *Sargassum* spp. or *Laminaria* spp. (Filbee-Dexter and Wernberg, 2020), phytoplankton and even pelagic fauna (e.g., finfish or whales; Chami et al., 2019), have also been proposed as blue carbon ecosystems."

For context see: Global Justice Ecology Project. SAVE THE WHALES... from the carbon market! <https://globaljusticeecology.org/whale-offsets/>

²⁶ Conservation International. Hinemoana Halo Ocean Initiative to Deliver a Blue Carbon Economy in Aotearoa, NZ. November 15, 2022.

<https://www.conservation.org/press-releases/2022/11/15/hinemoana-halo-ocean-initiative-to-deliver-a-blue-carbon-economy-in-aotearoa-nz>

Ocean20: A New Self-Funded Marine Resource Management Framework. Conservation International. November 14, 2022.

<https://www.conservation.org/press-releases/2022/11/14/ocean20-a-new-self-funded-marine-resource-management-framework>

²⁷ UNESCO. United Nations Decade of Ocean Science for Sustainable Development (2021-2030). Hinemoana Halo Ocean Initiative (H2O)

<https://oceandecade.org/actions/hinemoana-halo-ocean-initiative-h2o/>

²⁸ New York University Law School. MOTH Program. <https://mothlife.org/about/>

"How can we strengthen the implementation of the growing number of rights of nature rulings and laws to ensure they have material impact?"

²⁹ Indigenous Environmental Network and Global Justice Ecology Project. Who speaks for Nature? 2026.

New York University Law School. MOTH Program. Nonhuman Animal Communication Technologies. 2025.

<https://mothlife.org/technology-ecology/nonhuman-animal-communication-technologies/>

"NACTs entail a range of physical and physiological risks for nonhuman animals. These risks can arise directly or indirectly and without regard to NACT actors' original intent. They include the injury, exhaustion, starvation, illness, reproductive failure, reduced survivability, and death of nonhuman animals."

³⁰ Project CETI (Cetacean Translation Initiative). <http://projectceti.org>

³¹ Arctic Circle. Mere Takoko, Vice President, Conservation International Aotearoa and Ralph Chami, Co-Founder, Blue Green Future. Hinemoana Halo: Māori-led Ocean Solutions and Nature Positive Carbon++ Investments. October 9, 2023. <https://www.arcticcircle.org/journal/hinemoana-halo-maori-led-ocean-solutions-and-nature>

"The [Hinemoana Halo] mechanism will bundle carbon, biodiversity, and heritage credits as an inseparable whole into a Hinemoana Halo credit."

So-called "heritage credits" are based on the commodification of the cultures, traditional knowledge systems, spiritualities, governance, images and lives of Indigenous Peoples and local communities. Heritage rights are also called "biocultural carbon credits" and entail "Compounded Commodification: Privatization of Air, Life and Culture" (See Gourmet REDD in NO REDD!. 2007. Page 14. <https://no-redd.com/wp-content/uploads/2015/01/No-REDD-Booklet-IMPORTANT.pdf>)

³² Conservation International Aotearoa. Mere Takoko, Jasmine Kaa and Linda Bercusson, Hinemoana Halo Ocean Initiative. Section 4. Valuing our Moana.

"The Hinemoana Halo initiative aims to promote the valuation of ecosystem services performed by whales in Oceania."

Arctic Circle. Mere Takoko, Vice President, Conservation International Aotearoa and Ralph Chami, Co-Founder, Blue Green Future. Hinemoana Halo: Māori-led Ocean Solutions and Nature Positive Carbon++ Investments. October 9, 2023.

<https://www.arcticcircle.org/journal/hinemoana-halo-maori-led-ocean-solutions-and-nature>

"The [Hinemoana Halo] mechanism will bundle carbon, biodiversity, and heritage credits as an inseparable whole into a Hinemoana Halo credit."

"The area will come under an IPLC-led protection framework that will put more money into whale conservation and introduce seasonal protections across whale migratory routes or 'blue' corridors. The CO₂ carbon storage potential of this project combined with other early stage Hinemoana Halo carbon++ investments will represent the largest ever in the Pacific."

"A Blue Carbon Economy for the Pacific: Assistant Director at the International Monetary Fund's Institute for Capacity Development and Blue Green Future co-founder, Ralph Chami estimates that over the course of their lifetime, a great whale sequesters approximately 33 tons of CO₂, equivalent to 30,000 trees, and estimates that if whales were to return to their former abundance, they could capture approximately 1.7 billion tonnes of CO₂ annually, a carbon sequestration service worth \$13 per person per year."

³³ PMN. Christine Rovoi. Māori ocean rights under threat: Why Pasifika should be paying attention. October 22, 2025.

https://pmn.co.nz/read/environment/maori-ocean-rights-under-threat-why-pacific-communities-should-be-paying-attention#google_vignette

³⁴ Blue Green Future. Portfolio. Hinemoana Halo Initiative https://bluegreenfuture.org/portfolio_page/hinemoana-halo-initiative/

"...establish Aotearoa's first indigenous-led voluntary blue carbon regime to support tribes to protect, manage and monitor Aotearoa's coastal waters and high seas (including EEZ)."

EEZ: Exclusive Economic Zone of New Zealand. https://en.wikipedia.org/wiki/Exclusive_economic_zone_of_New_Zealand

"New Zealand's [exclusive economic zone](#) (EEZ) covers at least 4,083,744 square kilometres (1,576,742 sq mi),^[12] which is approximately 15 times the [land area](#) of the country."

³⁵ Arctic Assembly 2023. Program. "INDIGENOUS-LED BLUE NATURE MARKETS: OCEAN SOLUTIONS FROM THE PACIFIC Organized by: Conservation International Aotearoa Location: Kaldalón, Harpa Ground Floor SPEAKERS Mere Takoko, Vice President, Conservation International Aotearoa, Ngāti Porou, Rongowhakaata, New Zealand, Aperahama Edwards, Ambassador, Hinemoana Halo Initiative, Ngāti Wai, New Zealand Lisa Tumahai, Chairperson, Te Rūnanga o Ngāi Tahu, New Zealand Kevin Iro, Ambassador, Marae Moana, Rarotonga, Cook Islands, Ralph Chami, Co-Founder, Blue Green Future and Rebalance Earth, USA"

https://prismic-io.s3.amazonaws.com/arctic-circle-www/dd174672-6e82-405c-a223-9e335a7a8844_2023+Arctic+Circle+Assembly+Program.pdf

³⁶ Conservation International. Hinemoana Halo Ocean Initiative to Deliver a Blue Carbon Economy in Aotearoa, NZ. November 15, 2022.

<https://www.conservation.org/press-releases/2022/11/15/hinemoana-halo-ocean-initiative-to-deliver-a-blue-carbon-economy-in-aotearoa-nz>

³⁷ Conservation International. Hinemoana Halo Ocean Initiative to Deliver a Blue Carbon Economy in Aotearoa, NZ. November 15, 2022.

<https://www.conservation.org/press-releases/2022/11/15/hinemoana-halo-ocean-initiative-to-deliver-a-blue-carbon-economy-in-aotearoa-nz>

³⁸ Arctic Circle. Mere Takoko, Vice President, Conservation International Aotearoa and Ralph Chami, Co-Founder, Blue Green Future. Hinemoana Halo: Māori-led Ocean

Solutions and Nature Positive Carbon++ Investments. October 9, 2023. <https://www.arcticcircle.org/journal/hinemoana-halo-maori-led-ocean-solutions-and-nature>
"Recognizing the teething problems associated with current nascent and voluntary carbon markets, this initiative brings a fresh approach to create radical transparency and trust between buyers and sellers of the Hinemoana Halo credits. The project design, conservation life cycle and results are fully 'discoverable' through blockchain technology – creating transparency for the market and better price discovery than typical bilateral arrangements."

SDLCC. Adam Paul. Understanding Carbon Crypto: Tokenized Carbon Credits Explained. October 28, 2025

<https://sdccorp.com/post/understanding-carbon-crypto-how-tokenized-carbon-credits-are-changing-the-game/>

"Why Carbon Crypto? Challenges and Opportunities

A. Addressing Longstanding Issues in Carbon Markets

Traditional carbon markets are plagued by opaque operations, fraud risks, and high barriers to entry. Companies purchasing credits have little to no transparency into the offset projects, and double-counting of credits is a common issue. Tokenized carbon credits solve this. By recording each transaction on an immutable blockchain ledger, carbon crypto makes it nearly impossible to falsify or double-count credits. Every transaction is a public, unalterable record."

³⁹ Conservation International Aotearoa. Mere Takoko, Jasmine Kaa and Linda Bercusson, Hinemoana Halo Ocean Initiative. Hinemoana Halo Investment Proposal. Section 5. Our Hinemoana Blue Bonds.

Our Hinemoana Halo Blue Bonds

The Hinemoana Halo Blue Bond will promote financing into nature-based solutions including:

- (1a) marine protected areas and rāhui
- (1b) wetland and seagrass restoration
- (1c) taonga species recovery
- (1d) marine algae and krill recovery
- (1e) seaweed recovery
- (2) sustainable supporting industry development, including: (2a) fisheries (2b) aquaculture (2c) energy (2d) tourism and (2e) CDR technologies.



⁴⁰ Ibid.

⁴¹ United Nations University. Carbon Dioxide Removal Technologies. February 17, 2026.

<https://unu.edu/cpr/brief/carbon-dioxide-removal-technologies>

Brief. https://www.un.org/scientific-advisory-board/sites/default/files/2025-11/Decarbonization_Brief_EN_Rev10.pdf

⁴² GEXON. Viktoria Bohacikova. CO2 hazards in Carbon Capture, Utilisation, and Storage (CCUS).

<https://www.gexcon.com/resources/blog/co2-hazards-in-carbon-capture-utilisation-and-storage-ccus/>

⁴³ United Nations University. Carbon Dioxide Removal Technologies. Brief, Graphic. February 17, 2026.

https://www.un.org/scientific-advisory-board/sites/default/files/2025-11/Decarbonization_Brief_EN_Rev10.pdf

⁴⁴ Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025. Part 5.

Bond/Credit Market Overview

Potential Credit Buyers, Enablers and Credit Issuers

* These figures will be adjustable and contingent on securing funding for carbon investments over the next 3 years. CI Aotearoa will act only as the interim fund holder and administrator until Hinemoana Halo Fund is developed to be Partners. Funding/Investments secured for micro-enterprises will include an allocation (by proportional value) of the IUCN eligible bonds/credits to fund marine and terrestrial projects or to work with iwi/Māori partners.



⁴⁵ Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025. Part 5.

On the "illustrative and non-exhaustive" map, "Potential Credit Buyers (Demand)" include corporations such as Apple, Amazon, Disney, Patagonia, Microsoft and Walmart; financial institutions such as CITI Bank, Bank of America, J.P. Morgan Chase, US Bank, Commonwealth Bank, Goldman Sachs and Well Fargo; governments such as the United States, Germany, UK, Japan, France, Netherlands and Sweden; philanthropic organizations such as the Bill and Melinda Gates Foundation, the Climate Reality Project, Bloomberg Philanthropies, the Moore Foundation, the Bezos Earth Fund, the Wyss Foundation, the Rob and Melani Walton Foundation, Danish philanthropist Anders Holch among others; and multilateral banks like the World Bank, the European Bank, the Inter-American Development Bank; and United Nations agencies such as the Global Environment Fund (GEF), the World Health Organization (WHO) and the United Nations Development Programme (UNDP).

⁴⁶ Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025. Part 5.

Potential "Enablers" include carbon offset certifiers such as Verra, American Carbon Registry, BBOP, SD ViSta, climatecare, Carbon Trust and Koobi among others; big NGOs such as Conservation International, IUCN, The Nature Conservancy, World Wildlife Fund (WWF), Wildlife Conservation Society (WCS), Blue Nature Alliance, Blue Ventures, Oceana, Flor and Fauna International and Oceans5 among others. Whale offsets' Potential "Technology Providers" (for tracking whales with GPS tags and other tasks) include Pachama, Ripple and HIS Market (now merged with S&P Global) among others; as well as Potential "Academics" from Stanford University, Yale University, ecologic, Cawthorn Institute and CIMAS among others.

⁴⁷ Hinemoana Halo and Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025. Part 5.

Potential "Credit-Issuers (Supply)" include Costa Rica, Palau, Niue, Mozambique, Tanzania and Fiji; NGOs such as BCNET, PEW and Tofia Niue; and "CTFs" (Conservation Trust Funds) MAR Fund, FUNBIO, RED, Niue Ocean Wide (NOW) and the Ministerio de Ambiente (Ministry of the Environment of Ecuador) among others.

⁴⁸ Conservation International Aotearoa. Hinemoana Halo Seed Funding Proposal 2023-2025. Part 6. Supporting Establishment Activities.

"Accreditation of the Hinemoana Halo voluntary regime with IUCN in cooperation with CI technical teams."

⁴⁹ Carbon Credits. Debt-for-Nature Swaps Are Drawing Attention, Carbon Credits Play a Role. Jennifer I. November 9, 2022.

<https://carboncredits.com/debt-for-nature-swaps-are-drawing-attention-carbon-credits-play-a-role/>

⁵⁰ NACLA. Sophia Boddenberg. Greenwashing Debt in the Galápagos Islands. September 5, 2025.

<https://nacla.org/greenwashing-debt-in-the-galapagos-islands/>

⁵¹ World Bank Group. The Galapagos Islands have a Strategic Plan for Blue Economy Development. December 11, 2024.

<https://www.worldbank.org/en/news/press-release/2025/02/07/gal-pagos-cuenta-con-un-plan-estrategico-para-el-desarrollo-de-la-economia-azul>

NACLA. Sophia Boddenberg. Greenwashing Debt in the Galápagos Islands. September 5, 2025.

<https://nacla.org/greenwashing-debt-in-the-galapagos-islands/>

"The government hailed the deal as a 'historic agreement' that would help to protect endangered species such as whales and turtles..."

Galapagos Conservation Trust. Tom O'Hara. Ocean protection update: The Swimway, Hermandad and CMAR. January 18, 2023.

<https://galapagosconservation.org.uk/galapagos-ocean-protection-swimway-hermandad-cmar/>

"Protecting these key migratory routes has benefits beyond just conserving marine life, helping to mitigate climate change through blue carbon capture..."

⁵² Reuters. Marc James and Rodrigo Campos. Ecuador seals record debt-for-nature swap with Galapagos bond. May 9, 2023.

<https://www.reuters.com/world/americas/ecuador-seals-record-debt-for-nature-swap-with-galapagos-bond-2023-05-09/>

ORF America. Veronia Jijon. From Galápagos to Global: Leveraging Debt-For-Nature Swaps for Debt Relief and Environmental Protection. January 27, 2025.

<https://orfamerica.org/newresearch/debt-for-nature-swaps>

"Central to the swap's success was the issuance of a blue bond, an innovative financial instrument directly linked to marine conservation."

⁵³ NACLA. Sophia Boddenberg. Greenwashing Debt in the Galápagos Islands. September 5, 2025.

<https://nacla.org/greenwashing-debt-in-the-galapagos-islands/>

⁵⁴ No REDD Reader. <https://www.wrm.org.uy/wp-content/uploads/2013/04/REDDreaderEN.pdf>

Page 47: "For example, a community's forests could be included in debt-for-nature swaps as part of the payment of the foreign debt of the state. In this regard, the United States recently announced that it would subtract US\$21 million from the foreign debt of Brazil in exchange for initiatives to protect the forests of the Atlantic Mata in Brazil. Such forest protection could result in REDD-type projects in Brazil."

U.S. signs debt-for-nature swap with Brazil to protect forests. Mongabay.com, August 2010. http://news.mongabay.com/2010/0813-dfns_us_brazil.html

⁵⁵ CFFA. Andrew Standing. Galapagos Debt-Swap: "These deals are being used to privatize the management of strategic areas without the consent of those who inhabit these territories". June 9, 2025.

<https://www.cffacape.org/publications-blog/galapagos-debt-swap-these-deals-are-being-used-to-privatize-the-management-of-strategic-areas-without-the-consent-of-those-who-inhabit-these-territories>

"In December last year, your government announced that it had signed a deal with the **US government to open a military base on the Galapagos Islands. Unfortunately, it is hard not to wonder whether the US government's support for the Galapagos Bond had some part to play in getting the approval for the military base...** This swap allowed for the restructuring of Ecuador's debt with the aim of securing financing for the conservation of the **Hermandad Marine Reserve**, a 60,000 km² protected area that connects the Galápagos Islands with marine reserves in **Colombia, Panama, and Costa Rica. The primary justification for this initiative was the protection of biodiversity and the fight against illegal fishing, which necessitated enhanced maritime monitoring in the region. At the same time, in October 2023, Ecuador and the United States signed the 'Agreement on the Status of Forces' (SOFA), which establishes the legal framework for the presence of U.S. military personnel in Ecuador.**" [*Emphasis added.*]

⁵⁶ New America. Elizabeth Losos. Can Private Finance Save the World's Forests and Oceans? Sept. 18, 2025.

"Despite this progress, the blended-finance approach has not fully addressed key shortcomings of earlier debt-for-nature swaps, such as small debt reduction relative to high transaction costs, risks to debtor country credit ratings, inadequate conservation metrics, and sovereignty and transparency concerns."

<https://www.newamerica.org/planetary-politics/blog/trading-debt-for-nature/>

⁵⁷ CBD Alliance. ECO. Patrick Bigger. "Debt for nature swaps: proceed with caution (and low expectations)". October 24, 2025.

"The **IMF** itself states that swaps are much (much!) too small to restore fiscal solvency for countries, and that "it's more effective to address debt and climate or nature separately." Most concerning, there is evidence that debt for nature swaps contributing to funding protected areas played **a significant role in facilitating Indigenous and small holder dispossession.** This is linked to questions about conditionality, or the policy demands that Northern Governments or NGOs make of Southern governments in return for debt restructuring or cancellation; done poorly, the imposition of conditions for debt relief are **replay neocolonial structural adjustment** policies, impinging on Southern sovereignty and limiting effectiveness as communities are left out of planning and implementing conservation plans."

Journal of Applied Philosophy, Nicole Hassoun. "The Problem of Debt-for-Nature Swaps from a Human Rights Perspective." vol. 29, no. 4, 2012, pp. 359-77. *JSTOR*,

<http://www.jstor.org/stable/24356189>. Accessed 4 Mar. 2026.

⁵⁸ International Monetary Fund. Ralph Chami *et al.* Nature's Solution to Climate Change - A strategy to protect whales can limit greenhouse gases and global warming".

2019. <https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami>

⁵⁹ Indigenous Peoples Denounce Whale Offsets at UN Biodiversity Summit. Global Justice Ecology Project. November 1, 2024.

<https://globaljusticeecology.org/indigenous-peoples-denounce-whale-offsets-at-un-biodiversity-summit/>

⁶⁰ Wikipedia. Gregory Stone. https://en.wikipedia.org/wiki/Gregory_S._Stone

⁶¹ The Most Influential Leader in Ocean Conservation & Blue Economy Strategy - 2025. September 2025.

<https://theenterpriseworld.com/most-influential-leader-gregory/>

⁶² The Most Influential Leader in Ocean Conservation & Blue Economy Strategy - 2025. September 2025.

<https://theenterpriseworld.com/most-influential-leader-gregory/>

⁶³ Sonja Swift. Red Sky in the Morning: Of whales, water and warnings. Rocky Mountain Books. (*forthcoming*)

⁶⁴ Frontline. Ashish Kothari, Shrishtee Bajpai. Governance as if the earth mattered. February 4, 2026.

<https://frontline.thehindu.com/social-issues/earthy-governance-indigenous-democracy-nature-rights-global/article70586934.ece>

⁶⁵ The Guardian. Ajin Niranjani. How 'smog capital of Poland' saved 6,000 lives by cutting soot levels. February 20, 2026.

<https://www.theguardian.com/environment/2026/feb/20/krakow-smog-poland-saved-lives-black-carbon-green-initiatives>