INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA

2023

Public sitting

held on Wednesday, 20 September 2023, at 3 p.m.,

at the International Tribunal for the Law of the Sea, Hamburg,

President Albert J. Hoffmann presiding

REQUEST FOR AN ADVISORY OPINION SUBMITTED BY THE COMMISSION OF SMALL ISLAND STATES ON CLIMATE CHANGE AND INTERNATIONAL LAW

(REQUEST FOR ADVISORY OPINION SUBMITTED TO THE TRIBUNAL)

Verbatim Record

Uncorrected

Present:	President	Albert J. Hoffmann
	Vice-President	Tomas Heidar
	Judges	José Luís Jesus
		Stanislaw Pawlak
		Shunji Yanai
		James L. Kateka
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		Jin-Hyun Paik
		David Joseph Attard
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		Alonso Gómez-Robledo
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		Liesbeth Lijnzaad
		María Teresa Infante Caffi
		Jielong Duan
		Kathy-Ann Brown
		Ida Caracciolo
		Maurice K. Kamga
	Registrar	Ximena Hinrichs Oyarce

List of delegations:

INTERGOVERNMENTAL ORGANIZATIONS

Pacific Community (SPC)

Ms Rhonda Robinson, Director, SPC Geoscience, Energy and Maritime Division
Ms Kathy Jetñil-Kijiner, Climate Envoy
Ms Johanna Gusman, Regional Adviser, SPC Human Rights and Social Development Division
Ms Geraldine Giraudeau, Consultant, FAR Avocats
Mr Cameron Diver, Consultant, FAR Avocats
Mr Daniel Müller, Associate Counsel, FAR Avocats
Mr Rohan Nanthakumar, Special Counsel – Pasifika Program, Environmental Defenders Office

THE PRESIDENT: Please be seated. Good afternoon. The Tribunal will continue its hearing in the *Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law*. This afternoon we will hear an oral statement from the Pacific Community.

I now invite the representative of the Pacific Community, Ms Robinson, to make her statement. You have the floor, Madam.

MS ROBINSON: Honourable President and members of the Tribunal, it is a privilege to appear before you on behalf of the Pacific Community, also known as SPC, and present on the extraordinary need for all UNCLOS States Parties to prevent, reduce and control pollution of the marine environment as well as to protect and preserve it in the face of climate change impacts, namely: (1) ocean warming; (2) sea-level rise; and (3) ocean acidification.

I wish to congratulate the COSIS for bringing this urgent topic before the Tribunal. I also want to thank Ms Kathy Jetnil-Kijiner, Climate Envoy of the Republic of Marshall Islands (RMI), a Member State of SPC, for joining me in making this statement. As a low-lying atoll nation with specific expertize in addressing these issues, the Marshall Islands are well positioned to present to the Tribunal an atoll model produced by SPC to illustrate how sea-level rise impacts one of its islands.

My name is Rhonda Robinson, and I am the Director of SPC's Geoscience, Energy and Maritime Division based in Suva, Fiji. I lead one of SPC's largest divisions that supports Pacific countries and territories with scientific and technical solutions to address our region's greatest challenge, climate change. My experience with oceans and climate change is heavily informed from a Pacific experience, from whence I was born, have worked and lived my whole life to date, and intend to do so for its remainder.

This statement supports the COSIS request for an advisory opinion. There are no compelling reasons for you to decline to exercise your jurisdiction to provide an advisory opinion. We agree with COSIS that its request concerns a legal question that falls within its mandate. We also agree with COSIS that UNCLOS obligations and other international obligations should be interpreted and applied compatibly and harmoniously.

At the outset, I wish to provide some background on the SPC and our ability to furnish information on the questions submitted by COSIS to the Tribunal.

SPC is one of the Pacific region's scientific and technical intergovernmental organizations. We work alongside and with our Pacific Island Country and Territory Members to understand and develop effective solutions to the challenges they face. In this case, the science of understanding the impacts of climate change with specific focus on ocean warming, sea-level rise, and ocean acidification and the adverse impacts these have on our coastal communities is core to the capabilities of SPC. We do not represent the voice of any one sovereign State, but instead are the collective science capability for and alongside our region.

Our mandate and work programme addresses the many facets of climate change and its impacts on our region, including but not limited to, marine ecosystems, including fisheries,[1] coastal hazards and human rights protections.[2] We have expertise in global and regional analyses of the impacts of climate change on the marine environment. Additionally, SPC is the regional lead for the implementation of many climate change mitigation and adaptation programmes, including on sea-level rise as well as loss and damage. We also sustainably manage Pacific maritime zones, ecosystems and resources from "ridge to reef" for current and future generations.[3]

SPC is grateful for the Tribunal's invitation to participate in these proceedings. By doing so, you have paved the way for those who are the most affected by the deleterious impacts of climate change on the marine environment to provide their input on how best to protect and preserve it.

The key takeaway from SPC's oral statement is simply this: We hope to assist the Tribunal by providing a *regional perspective* on the best available science on ocean warming, sea-level rise and ocean acidification; *and what it really means for our people and our communities*. We will demonstrate, with supporting science and modelling, the existential reality the Pacific is facing now and will continue to face with increasing frequency and intensity into the future.

We embrace the views of many participants in these advisory proceedings that anthropogenic greenhouse gas emissions qualify as "pollution of the marine environment" within the meaning of UNCLOS.[4]

The best available science, alongside existing obligations under international environmental and human rights law,[5] is necessary to interpret States' obligations under UNCLOS. The best available science shows us greenhouse gas is already causing damage, increasing our ocean temperatures, increasing sea-level rise and increasing ocean acidification. This best available science confirms the urgency for States to keep warming below 1.5°C to 2°C by rapidly curbing fossil-fuel greenhouse gas emissions.[6]

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[1] Note that, under the United Nations Convention on the Law of the Sea (UNCLOS), fishing is singled out among the legitimate uses of the sea that are negatively affected by pollution ("*pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities")*, UNCLOS, 10 December 1982, 1833 United Nations Treaties Series (U.N.T.S.) 397 (entered into force 1 November 1994) at Article 1(1)(4).

[2] For The Pacific Community (SPC) mandate, *see* Article IV, §§ 6-10, of the Canberra Agreement establishing the South Pacific Commission (U.N.T.S., vol. 97, p. 227).

[3] For the full range of SPC's implementation for mitigation and adaptation programming, *see* Pacific Community Strategic Plan 2022-2031 (available at: https//www.spc.int/strategic-plan).

[4] UNCLOS, *supra* note 1.

[5] Vienna Convention on the Law of Treaties, 23 May 1969, 1155 U.N.T.S. 331 (entered into force on 27 January 1980) at Article 31(3)(c).

[6] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2022 (also available at: https://report.ipcc.ch/ ar6/wg2/IPCC_AR6_WGII_FullReport.pdf). *See also*, International Energy

This reality requires concrete action from the international community. Scientists, including SPC's own, have long sounded the warning bell on the tremendous implications that climate change will exert on our society, and Pacific leaders have heard this call.

The 2021 Pacific Island Forum Leaders Ocean Statement commits urgent action to reduce and prevent the irreversible impacts of climate change on our ocean, reiterating that climate change is the single greatest threat to the livelihoods, security and well-being of peoples of the Blue Pacific.[7] It calls on Pacific Rim countries to expeditiously implement relevant measures to prevent and effectively manage marine pollution in accordance with international law, including meeting or exceeding nationally determined contributions, formulating mid-century low emissions development strategies in 2020 and may include commitment and strategies to achieve net zero carbon by 2050.[8]

This "radical ambition" shown in the Pacific must be matched, especially given the pressing climate change science related to ocean warming, sea-level rise and ocean acidification.

Let me first begin with ocean warming. As outlined in SPC's written statement, ocean warming caused by climate change is a threat that significantly affects pelagic and coastal fisheries, coral reef systems and other coastal changes. Additionally, as has been mentioned many times during this hearing, the capacity of the Pacific Ocean – the world's largest ocean – to absorb carbon dioxide and excess heat is immense. Without healthy oceans this vital function is jeopardized.[9]

Pacific countries and territories manage over 10 per cent of the world's ocean and 20 per cent of the global marine jurisdictions under our Exclusive Economic Zones (EEZs),[10] demonstrating the existential threat we face whilst also underlying the region's responsibilities to protect the ocean for future generations.

Agency (IEA), *Fossil Fuel Consumption Subsidies 2022*, Paris 2023 (available at: http://www.iea.org/reports/fossile-fuels-consumption-subsidies-2022). Noting the immediate need to halt subsidies towards fossil fuel supply, new unabated coal plans, new oil and gas fields and new coal mines.

[7] *See* Pacific Islands Forum Leaders Ocean Statement 2021 (available at: http://www.forumsec.org/2021/03/22/pacific-islands-forum-leaders-ocean-statement-2020-21), reaffirming commitments to Vemööre Declaration: Commitments to Nature Conservation Action in the Pacific Islands region, 2021 – 2025; 2019 Kainaki II Declaration for Urgent Climate Change Action Now; 2018 Boe Declaration for Regional Security; 2016 Pohnpei Ocean Statement: A Course to Sustainability; and 2014 Palau Declaration on The Ocean: Life and Future and regional policy instruments: 2010 Framework for Pacific Oceanscape; 2002 Pacific Islands Regional Ocean Framework for Integrated Strategic Action Policy; the Pacific Islands Framework for Nature Conservation and Protected Areas, 2021 – 2025; Regional Action Plan: Marine Litter; Cleaner Pacific 2025 Strategy; Framework for Pacific Regionalism; Framework for Resilient Development in the Pacific; and Regional Roadmap for Sustainable Pacific Fisheries.

[8] *Id*. at 4. *See also* 2050 Strategy for the Blue Pacific Continent / Pacific Islands Forum Secretariat. Suva, Fiji: Pacific Islands Forum Secretariat, 2022, at 10.

[9] *See, e.g.,* UN Climate Action, *The ocean – the world's greatest ally against climate change* (available at http://www.un.org/en/climatechange/science/climate-issues/ocean).

[10] Powers M, Begg Z, Smith G and Miles E (2019). Lessons from the Pacific Ocean Portal: Building Pacific Island Capacity to Interpret, Apply, and Communicate Ocean Information. Front. Mar. Sci. 6:476. doi: 10.3389/fmars.2019.00476. *See also*, The Pacific Community (SPC) Geoscience, Energy and Maritime Division's Oceans & Maritime programme data (available at http://gem.spc.int/key-

For the past 30 years, the rate of ocean warming has more than doubled. This is attributed to human-caused climate drivers. By 2100, the ocean will take up to two to four times more heat than between 1970 and the present if global warming is limited to 2°C, and up to five to seven times more at higher emissions.[11] Warm-water coral reefs are forced to endure extreme temperatures, with marine heatwaves already resulting in large-scale coral bleaching at disturbingly increasing frequency.[12]

Globally, marine heatwaves have doubled and become longer-lasting, more intense, more extensive and are projected to worsen. Worldwide, almost all warm-water coral reefs are projected to suffer significant losses even if global warming is limited to 1.5°C.[13]

Perhaps one of the most well-documented adverse effects of ocean warming is on fish and fisheries. The scarcity of natural resources and limited private sector development in the Pacific makes the tuna industry vital to island economies. With the islands spread over almost 20 million square kilometres of ocean, our oceans are our largest natural resource contributing to Pacific economies through revenues from fishing licenses,[14] amongst other things.

If emissions continue to rise throughout the twenty-first century (highest baseline emissions scenario), we will see by 2050 a redistribution of tuna. As they shift east, the local decline in tuna fish means they will move from coastal States' EEZs to the high seas or international waters. This results in an annual loss of revenue from fishing access fees that is upwards of USD $90 million.[15] It is also worth noting that

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work/oceans-martime-programme). For example, the surface of the EEZ for Tuvalu is 27,000 times its land area.

[11] IPCC, 2019: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 755 pp. https://doi.org/10.1017/9781009157964

[12] *See* NOAA Coral Reef Watch Dataset, Pacific Environment Data Portal, Secretariat of the Pacific Regional Environmental Programme (SPREP), released 21 July 2021 (modified 11 February 2022) (available at: http://pacific-data.sprep.org/dataset/noaa-coral-reef-watch).

[13] Hoegh-Guldberg, O., D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J.Guiot, Y. Hijioka, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: *Impacts of 1.5ºC Global Warming on Natural and Human Systems*. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T.Maycock, M.Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 175-312. https://doi.org/10.1017/9781009157940.005.

[14] J. D. Bell et al., "Pathways to sustaining tuna-dependent Pacific Island economies during climate change", *Nature Sustainability*, Vol. 4, 2021, p. 900-910 ('could reduce total annual fishing access fees earned by the ten Pacific SIDS by an average of US$90 million (range = –US$40 million to−US$140 million) per year compared with the average annual revenue.') (available at: https://www.nature.com/ articles/s41893-021-00745-z).

[15] *Id*. at 901. Additionally, recent review work across SPC's 22 member countries and territories has highlighted that the volume of fishery production between 2007 and 2021 increased by 20.3 per cent (*Id.*), denoting further importance of fisheries as significant income generation in the Pacific.

approximately 55 per cent of the world's tuna landings come from the Western and Central Pacific waters.[16]

Therefore, the economic impact on Pacific communities is unsustainable. Almost half (47 per cent) of Pacific households list "fishing" as either a primary or secondary source of income.[17] Additionally, Pacific Island national fish consumption is between three to four times the global average.[18] If lower-emission scenarios can be achieved, it provides sustainable pathways for tuna-dependent Pacific Islands economies.

Shifting to coastal fisheries, the decline in warm-water coral reefs is projected to significantly increase risks on seafood security and pose threats to nutritional health on the communities that rely on them as food sources.[19] Given the limited agricultural abilities of atoll island States (that is, poor soil, limited and livestock diversity), the right to food cannot be met without sustainable fisheries that are reliant on a healthy marine environment.[20] Food is at the heart of Pacific identities, cultures and economies.

Another major concern with ocean warming is its direct effects on sea-level rise. *Sea-level rise constitutes an existential threat to our region.* As is elaborated in our written statement and will be further developed by my colleague from the Marshall Islands, the rate of global mean sea-level rise has doubled in the last century and is expected to accelerate between four and ten times by 2100.[21] This is having

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[16] S. R. Hare et al., The western and central Pacific tuna fishery: 2021 overview and status of stocks. Tuna Fisheries Assessment Report no. 22, Pacific Community, Noumea, 2022 (available at: https://purl.org/spc/digilib/doc/8izba).

[17] H. Seidel and P. N. Lal, Economic value of the Pacific Ocean to the Pacific Island Countries and Territories, IUCN, Gland, 2010 (available at: https://www.iucn.org/sites/default/files/import/downloads/economic_value_of_the_pacific_ocean_to_the_pacific_island_countries_and_territories_p.pdf).

[18] South Pacific Regional Environment Programme (SPREP), Pacific Fisheries: General Overview, Economic Opportunity (available at: https://library.sprep.org/sites/default/files/pacific-fisheries-general-overview.pdf)

[19] The new song for coastal fisheries – pathways for change: The Noumea strategy (a regional strategy that was approved by the ninth SPC Heads of Fisheries Meeting, held in Noumea, New Caledonia in March 2015, and the 93rd Official Forum Fisheries Committee (FFC) Meeting, held in Funafuti, Tuvalu, in May 2015. It was endorsed by the 11th Ministerial FFC Meeting, held in Funafuti, Tuvalu, in July 2015) states that fish is the main source of animal protein for Pacific Island nations; ('Amongst rural populations, 50–90 per cent of the animal-sourced protein consumed comes from fish.') *Id*. at 1. Supporting arguments can be found in SPC's Fisheries, Aquaculture and Marine Ecosystems Division Policy Brief on Gender and human rights in coastal fisheries and aquaculture law (available at: SPC Policy Brief #36: Gender and human rights in coastal fisheries and aquaculture law - SPC Policy Brief #36 (windows.net)).

[20] *Id*. at 3.

[21] IPCC, Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, Switzerland, 2014 (also available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ SYR_AR5_FINAL_full.pdf). *See also*, the following relevant information from SPC written submission: The combined effect of mean and extreme sea levels will result in events which are rare in the historical context (once every 100 years) occurring yearly at some locations by the middle of this century under all emission scenarios. For Pacific Islands, the mean sea level rise is compounded by the vertical submergence of the islands themselves, along with changes in weather systems such as increased tropical cyclone intensities and large swell events. Already, across the region, the number of days with coastal inundation have increased by more than 500 per cent due to sea level rise.

enormous impacts on the marine environment and our communities and will continue to with increasing frequency and intensity.

Coastal communities in the Pacific have been significantly affected by the range of ocean-related climate impacts, where most of the population live on low-lying coastal lands.[22] The impacts of sea-level rise have forced many communities to abandon their ancestral lands and relocate to safer areas, often resulting in the loss of traditional food sources, cultural heritage, identity, practices, traditional knowledge, social cohesion, as well as economic stability and security.[23] The displacement of these communities poses significant human rights challenges.[24] We consider that an appropriate response to this threat can only be achieved if the experience of those who are the most impacted is prioritized over those who are less immediately and urgently impacted.[25]

Sea-level rise caused by climate change is both a direct harm as well as a threat multiplier to our region.[26] We acknowledge that action to address the threat of sea-level rise must come from the international community collectively. Echoing our friends from the African Union,[27] collective State action to reduce the quantity of continued greenhouse gas emissions within their jurisdiction and control will likewise control the rate of increase of marine pollution and, in turn, better protect and preserve the marine environment.

Finally, regarding ocean acidification, in line with the most recent IPCC Report, SPC contends that ocean acidification is set to increase in this century at rates dependent on the future of GHG emissions. There is scientific consensus that the ocean has taken up between 20 to 30 per cent of total anthropogenic carbon dioxide emissions

[22] *See, e.g.*, the Pacific coral atoll nations of Tokelau, Tuvalu, Kiribati, and Marshall Islands. With the ocean area exceeding arable land area, there is a great need to focus efforts to sustain our ocean resources, particularly for atoll nations.

[23] *See, e.g.,* Pearson, J., Jackson, G., McNamara, K.E., n.d. Climate-driven losses to Indigenous and local knowledge and cultural heritage. Anthr. Rev. *See also, Perkiss, S., Moerman, L., 2018. A dispute in the making: A critical examination of displacement, climate change and the Pacific Islands. Account. Audit. Account. J. 31, 166–192. https://doi.org/10.1108/AAAJ-06-2016-2582*. Establishing that changes in habitats and rising sea levels will lead to the displacement of fishing communities, either by flooding of homes, or changing ocean conditions rendering fishing grounds unusable or unrecognisable. Both would cause a loss of traditional knowledge and cultural identity relating to fishing practices used and historical, emotional, and family ties to traditional fishing grounds and sea areas.

[24] *See generally*, Perkiss, S., Moerman, L., 2018. A dispute in the making: A critical examination of displacement, climate change and the Pacific Islands. Account. Audit. Account. J. 31, 166–192. https://doi.org/10.1108/AAAJ-06-2016-2582. SPC believes that consultation with such overburdened communities is necessary via a people-centred approach.

[25] This is in line with the well-established principle in international environmental law of common but differentiated responsibilities and respective capabilities considering different national circumstances and is fundamental to the concept of equity. *See* Christina Voigt et al., *Dynamic Differentiation: The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement*, 5:2 Transnational Environmental Law 285 (2016) at 303.

[26] Additionally, through our work, we know that this type of environmental stress has distinct impacts on women and social groups with intersecting identities that can further exacerbate inequalities, poverty, and how communities cope with such realities. Compounding this, the growing pressure on food security often disproportionally falls on women.

[27] Written Statement by The African Union, paras 215, 219; *see*, *generally*, paras. 211-221.

since the 1980s.[28] Continued carbon uptake by the ocean by 2100 is virtually certain to exacerbate ocean acidification.[29] Ocean acidification has the potential to adversely affect food production, including shellfish, aquaculture and fisheries, as well as negatively impact coral reef ecosystems. The capacity of oceans to absorb carbon dioxide will also be diminished under higher warming scenarios.[30]

Despite these warnings, the impacts of ocean acidification caused by increased carbon dioxide and greenhouse gas emissions are not properly reflected in global climate change responses to protect and preserve the marine environment, including curbing the harms specifically enumerated within UNCLOS. This risks the well-functioning of marine ecosystems and increases risks to the coastal communities that live in and surround them. Furthermore, the lack of concrete strategies to address ocean acidification by international instruments makes UNCLOS provisions and the work of the Tribunal more significant.

The Pacific has responded to what the science is telling us. Despite the Pacific's best efforts to adapt with the limited resources we have, communities continue to suffer loss and damage and fear for the future of our children to enjoy the marine environment in the same way as their ancestors. Regardless, Pacific Islands remain resolute and are amongst the most ambitious to lead by example. Our youth are defiant against being written off as the orphans of climate change. They are pushing for greater accountability from those in power, including on international tribunals such as this, because they recognize that without laws that rise to the level of the threat their generation faces, any prospect of a clean and healthy marine environment will be lost.

Pacific leaders have worked hard to develop several regional instruments recognizing climate change as an existential crisis for the region and adopting approaches and policies to combat it. For example,in 2021, the Declaration on Preserving Maritime Zones in the Face of Climate Change-related Sea-level Rise represents our region's good faith interpretation of UNCLOS, noting that the relationship between climate change-related sea-level rise and maritime zones was not foreseen or considered by the drafters of UNCLOS.[31]

Last year, the 2050 Strategy for a Blue Pacific Continent was endorsed by Pacific Island Forum Leaders. This strategy reinforces implementation of agreed measures that proactively, collectively and in a culturally appropriate manner address climate

[28] *Supra* note 11 at 5.2.2.3. (*Explaining* that open ocean surface pH has declined by a very likely range of 0.017-0.027 pH units per decade since the late 1980s, with the decline in surface ocean pH very likely to have already emerged from background natural variability for more than 95 per cent of the ocean surface area.).
[29] *Id*.
[30] *Id*. (*Discussing* that open ocean surface pH is projected to decrease by around 0.3 pH by 2081-2100, relative to 2006-2015. To put this in perspective, a drop in pH of 0.3 to 0.4 represents more than a 150 per cent increase in the acidity levels of the ocean.).
[31] *See* Declaration on Preserving Maritime Zones in the Face of Climate Change-Related Sea Level Rise, 2021 (available at: http://www.forumsec.org/2021/08/11/declaration-on-preserving-maritime-zones).

change and various current and future impacts, including, relevantly, sea-level rise and ocean acidification.[32]

These initiatives are significant. But they alone are not enough to ensure the protection and preservation of the marine environment. We need *all States* to do their part, and the clarification provided by the Tribunal via this advisory opinion will be of central importance in this regard.

I want to bring it back to the communities and the people themselves. In the Pacific, there is a distinctive connection between "people" and the "environment", such that one cannot simply detach from the other. They are an ecosystem; they are one and the same.[33] The Pacific relationship with the marine environment as stewards of ecological systems and associated traditional knowledge, custom and subsistence-living have sustained our people for hundreds of thousands of years. Advisory proceedings like this give voice to some of the most climate change-susceptible communities in our low-lying atoll nations, articulating the threat they are experiencing on the frontlines to the impacts of climate change.[34]

These impacts impose significant hardship on the people who interact with *and rely on* the coastal and marine environment daily for their basic needs. As has been recognized by the International Court of Justice, "the environment […] represents the living space, the quality of life and the very health of human beings, including generations unborn."[35] This is already manifesting across the Pacific. These observations are consistent with using a human-rights based approach to help communities most adversely affected.[36]

Thus, the scope and content of obligations to prevent, reduce and control pollution of the marine environment, and to protect and preserve it, must be considered harmoniously with the rights of people and communities to enjoy their rights, including to a *clean and healthy marine environment*.

The present opportunity. The Tribunal has the greatest mandate to address legal questions concerning the marine environment because the interpretation and application of UNCLOS in this regard is *paramount* to regulating all ocean space, its uses, its resources and their ripple effect on Pacific people.

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[32] *See* the Pacific Island Forum 2050 Strategy for the Blue Pacific Continent (available at: https://www.forumsec.org/wp-content/uploads/2022/08/PIFS-2050-Strategy-Blue-Pacific-Continent-WEB-5Aug2022.pdf) at 25.

[33] *See, e.g.*, in Samoan: *fanua*; in Fijian: *vanua*.

[34] Commonly voiced concerns include food and water security, coastal erosion, and the disproportionate impact on women, girls, and children.

[35] International Court of Justice (ICJ), Legality of the Threat of Use of Nuclear Weapons, Advisory Opinion, ICJ Reports 1996, at page 241, paragraph 29.

[36] *See*, *e.g.*, Pedro Arrojo Agudo (Special Rapporteur on the human rights to safe drinking water and sanitation), Special thematic report on climate change and the human rights to water and sanitation (Part 1: Outlining the impacts of climate change on the human rights to water and sanitation around the world, Part II: The impacts of climate change on the human rights to water and sanitation of groups and population in situations of vulnerability, Part III: A rights-based approach to adaptation, mitigation, finance, and cooperation), Jan. and Mar. 2022. *See also*, generally, Amicus brief submitted to the International Tribunal for the Law of the Sea by the UN Special Rapporteurs on Human Rights & Climate Change (Ian Fry), Toxics & Human Rights (Marcos Orellana), and Human Rights & the Environment (David Boyd).

In conclusion, as you prepare this advisory opinion, take note of the science, lived experience and knowledge specific to the historic custodians and ongoing stewards of our global marine environment. Learn from the thousands of years of indigenous care for our ocean environment and biodiversity and how we are using our collaborative cultural approaches to lead on climate issues via regional law and policy. Take heed of the urgency with which the international community must act, not just for Pacific peoples but for Indigenous custodians globally and humanity collectively. Use your authority to provide an advisory opinion that explains how UNCLOS *truly* is protective of the marine environment.

I will now preserve the remainder of the SPC's time to our Member State and representative from the Republic of the Marshall Islands, who will continue to elaborate on the issue of sea-level rise and its impact on coastal communities of the Marshall Islands. I kindly request that you invite my colleague Ms Jetnil-Kijiner to make her statement. *Vinaka vakalevu* and thank you.

THE PRESIDENT: Thank you, Ms Robinson. I now give the floor to Ms Jetnil-Kijiner to make her statement. You have the floor, Madam.

MS JETNIL-KIJINER: Honourable President and members of the Tribunal, my name is Kathy Jetnil-Kijiner and I serve as Climate Envoy for the Republic of the Marshall Islands Government. The Marshall Islands are located here, in the Northern Pacific Region.

The questions before the Tribunal concern prevention of marine pollution and protection of the marine environment, including from the deleterious impacts of sea-level rise. I would like to focus your attention on the integrated impact of sea-level rise and inundation on my community. The severity of these impacts cannot be overstated. I wish to use this time to elaborate on what the science means to the Marshall Islands, to my community and to me personally.

We are at a point in time where it is still possible to change the reality that faces our Pacific peoples by immediately reducing greenhouse gas emissions that pollute the marine environment. Models like the one I will share with you today demonstrate the reality and prediction based on the best available science, reiterating the importance of States' obligations to prevent marine pollution and to protect and preserve the marine environment, and that they must act on these urgently. If we do not act with sufficient urgency and ambition within this decade – within these next seven years – our people will suffer for thousands of years.[37]

This atoll or coral island that you are seeing is the atoll of Majuro, a type of coral island in the form of a ring known as the barrier reef, with a very low altitude and

[37] *See* IPCC AR6 WGII, *Summary for Policy Makers* D.5 ('Societal choices and actions implemented in the next decade determine the extent to which medium and long-term pathways will deliver higher or lower climate resilient development (high confidence)'); and *Summary for Policy Makers* D.5.3 ('[a]ny further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all (very high confidence)') at 35.

housing a lagoon.[38] The Marshall Islands is an atoll nation that is only two meters above the sea level with no mountains and no higher grounds. This is my home. It is the capital of the Marshall Islands, one of 64 islands spread across approximately 1.9 million kilometres squared of ocean space.[39]

Our main population lives on this island you see and most live in the narrow areas of Delap, Uliga and Djarrit. This is where I live. However, I will focus on the widest part of our island known as Laura. Keep that in mind when I take you through the realities we are facing now and what the science shows us into the future.

This is an issue of time and temperature: we need the time to adapt, and we need the temperature to slow its upward trend to reduce the loss of my home.[40]

This is the area of Laura, the widest part of the atoll of Majuro.

The freshwater lens shows the extent of groundwater in this area. In atoll and low-lying islands, freshwater lens is a thin layer of water under the island sitting on top of the salt water. The amount of freshwater, or the thickness of the lens, depends on many factors such as rainwater, how the water is managed and how it is being extracted for community use. In the case of Majuro, this lens supports more than 23,182 people living in Majuro. This area is home to approximately 2,500 of those people.[41] This water is piped to treatment plants for community access and is the largest and only freshwater lens on the island.

The freshwater lens area is important, as it supports our food and water security. You can see the yellow circles are how the system is monitored to check for salinity levels. This is done to ensure the lens is managed effectively to reduce the risk of overextraction of the thin layer of freshwater.

What happens when we use world-class science to model both hazard and disaster risk before any sea-level rise impact and then compare this with incremental human-induced sea-level rise? As you can see in this slide here is a thin blue line around the edge of the area of Laura. Around the edge of the atoll are homes, infrastructures, such as schools and hospitals, and you can also see this area, in the middle, is where there is significant farming area which provides food security for the communities in this area.

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[38] *See generally*, the Geoscience, Energy, and Maritime Division's modelling website for atoll specific data (available at: https://opm.gem.spc.int/prep/home).

[39] Access to this full data set can be found on SPC's modelling website (available at: https://opm.gem.spc.int/prep/home). This dashboard was developed under the Pacific Resilience Programme II Project. The portal provides home for gridded and geospatial data produced by the project. *See also*, the Majuro atoll map from SPC modelling (available at: https://landscapeknowledge.net/majuro-atoll-map/). We have also linked via QR code on the presentation page.

[40] *See* Verbatim Record, Oral Statement by Hon. Kausea Natano for Tuvalu, ITLOS/PV.23/C31/1, page 14 at 29-30.

[41] Economic Policy Planning and Statistics Office of the Republic of the Marshall Islands, Population and Housing Census 2021 (PHC 2021), version 01 of the licensed datasets (March2023), provided by the Pacific Data Hub – Microdata Library (available at: https://microdata.pacificdata.org/index.php/home) Furthermore, the population of the RMI is 53,158 persons (2011 Census), with Majuro and Kwajalein (largely Ebeye) currently accounting for three-quarters of the country's population.

This model is made up of high-resolution LiDAR elevation data, a remote sensing method that uses light from a pulsed laser to measure ranges of variable distances to the Earth and is used to examine its surfaces. LiDAR data is combined with the inundation risk based on SPC modelling to predict the implications and risk of extreme sea-flooding events, without the addition of sea-level rise. This model and the science that has gone into it is more than three decades of scientific work in the Laura area.

This modelling shows an inundation event or a storm surge.[42] You can see even without sea-level rise, the surrounding areas are still vulnerable to a relatively small wave inundation event. For example, the red buildings shown here denote the school, hospital and church. In scientific terms, this kind of event would be expected to happen every 10 years based on pre-sea-level rise impacts that we are already witnessing at home.[43]

If we use the same science in a scenario – that's the marling – without the addition of sea-level rise projections, this slide shows what a disaster event caused by wave inundation would look like. This shows an event that would be expected to occur every 100 years. Clearly, this is a significant event for our communities, even without the addition of any sea-level rise.

So, what happens if we add small amounts of sea-level rise? As I stated before, this is a time and temperature issue because without the time to better prepare and without action to slow the oncoming impact of human-induced sea-level rise, these disaster events become extreme sea-level rise events for our people.

In this slide, what you are now seeing is modelling that shows 25 centimetres of sea-level rise. The modelling is then developed to see how an event that would be expected to occur every 10 years behaves. As you can see, adding only 25 centimetres takes what was a minor wave inundation event and turns it into an extreme sea-level rise event.

Based on the science, the addition of 25 centimeters of sea-level rise is expected to occur between 2050 and 2060.[44]

To give you contrast, the picture on the left is the modelling of what a wave inundation event would have looked like before we had any impact at all of climate-induced sea-level rise; this would be expected to occur every 10 years. As you can see, there is coastal impact but it's minor. On the right is the same wave inundation modelling if you model it with 25 centimetres of sea-level rise – a tiny increase smaller than the size of a standard ruler takes what was a standard wave inundation event and makes it an extreme event for our people. This shows the reality that

[42] *Supra* note 11.
[43] *Id*.
[44] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2022 (also available at: https://report.ipcc.ch/ ar6/wg2/IPCC_AR6_WGII_FullReport.pdf). Projection scenarios used in this presentation are based on the Shared Socioeconomic Pathways (SSPs) from the latest IPCC report. SSPs include changes in human behaviour and policy and are considered more representative of potential climate futures.

events that are normally occurring are intensified and become more extreme and more frequent.

This is why anthropogenic impacts and the need to slow the pace at which the sea is rising by rapidly decarbonizing our globe will give us more time to prepare for the oncoming extreme events we will expect to see in the coming decades for our future generations.

Moving further into what these scenarios could become for our communities. This model you see in front of you is what my country will face at 50 centimetres of sea-level rise, which is expected to occur if we continue with the current trajectory within this century.[45] Again, this is about time and temperature, as this scenario shows that adding just 50 centimetres of sea-level rise generates an extreme event every 10 years. You will also note that what is expected to happen every 10 years is as serious as what was expected to happen every one in 100 years *without the addition of sea-level rise projections*.

What was a minor event without any sea-level rise is now a major event with salt water in our food area and seeping into our freshwater lens. This event you see means salt water is our food crops. Salt water is in our freshwater. Communities are displaced and affected by waves and homes are inundated with salt water. This scenario is tipping point for our people, and we know this.

This is the point we, as a country, know that we must look at extreme adaptation measures to protect our home or make unprecedented choices such as relocation of our capital to other islands – a decision we are being forced to make due to the existential impact of this external threat of climate induced sea-level rise.

The Marshalls is already planning for a 50-centimetre sea-level rise scenario in 70-90 years – when my 9-year-old daughter is an adult – which means we are already planning for this reality. Through our National Adaptation Plan, we are looking at extreme adaptation measures, which includes elevating parts of our islands, as well as internal relocation, from different islands to another.

The final scenario I want to show you is modelled to 1 metre of sea-level rise. What you see on your screen shows that every 10 years our home will be completely inundated by extreme sea-level rise threats if sea-level rise reached 1 metre. The science has yet to determine how long it takes for our food crops to recover from the salt. We do not know how long it takes for our freshwater to regenerate after being polluted with salt water. But we do know that if we continue the current course of greenhouse gas emissions, that this puts our livelihoods and people at risk. This reality requires the slowing down of the current trajectory we are on as a global community.

What does this mean for me, my children, and my grandchildren? This image is an example of what extreme events look like. We only have one road on our island

[45] International Organisation for Migration, Jo-Jikum, Marshall Islands Conservation Society, The University of Melbourne and Women United Together Marshall Islands, 2023. *My heritage is here: Report on Consultations with Communities in the Marshall in Support of the Development of the National Adaptation Plan.*

home. This is that road after an extreme inundation event in 2019. What the model shows is that events like this will happen with increased frequency and intensity as sea-level rise continues.

In community consultations across every island, community members have made observations of sea-level rise, as well as additional factors such as drought and high temperatures of heat.[46] As you can see, sea-level rise has been witnessed at the community level; so, sea-level rise impacts not only for the specific site of Laura, but also for our entire country. And this does violence to our innate connection to the marine environment on which our culture and livelihoods rely.

That is why we need the global community to act. Not just for us but for our entire planet, as we may be one of the first witnessing these impacts, but we won't be the last.

All States are obliged to prevent marine pollution and protect the marine environment under UNCLOS. Those obligations are significant for the future of the Marshall Islands, my community, my family.

Your advisory opinion will provide much needed clarity about the scope and extent of those obligations, and this can guide all States Parties to ensure that the extreme scenarios in the model I have shown you do NOT become the reality for Pacific peoples.

Vinaka vakalevu. Thank you.

THE PRESIDENT: Thank you, Ms Jetnil-Kijiner. This brings us to the end of this afternoon's sitting. The Tribunal will sit again tomorrow morning at 10 a.m., when it will hear oral statements made on behalf of Comoros, the Democratic Republic of The Congo and the International Union for Conservation of Nature and Natural Resources. The sitting is now closed.

THE CLERK OF THE TRIBUNAL: All rise.

(*Sitting closed*)

[46] *Supra* note 45.