

INTERNATIONAL COURT OF JUSTICE

OBLIGATIONS OF STATES IN RESPECT OF
CLIMATE CHANGE

(REQUEST FOR AN ADVISORY OPINION BY
THE UNITED NATIONS GENERAL
ASSEMBLY)



FFA

**WRITTEN STATEMENT OF THE
PACIFIC ISLANDS FORUM FISHERIES AGENCY**

15 MARCH 2024

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I. The questions posed to the Court by the General Assembly

1. The United Nations General Assembly, at its sixty-fourth plenary meeting, adopted resolution 77/276 entitled “Request for an advisory opinion of the International Court of Justice on the obligations of States in respect of climate change”. In its resolution, the General Assembly decided, in accordance with Article 96 of the Charter of the United Nations, to request the International Court of Justice to render an advisory opinion pursuant to Article 65 of the Statute of the Court, on the following questions:

Having particular regard to the Charter of the United Nations, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the United Nations Framework Convention on Climate Change, the Paris Agreement, the United Nations Convention on the Law of the Sea, the duty of due diligence, the rights recognized in the Universal Declaration of Human Rights, the principle of prevention of significant harm to the environment and the duty to protect and preserve the marine environment,

- (a) What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations?
- (b) What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:
 - (i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?
 - (ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?

2. This written statement is submitted by the Pacific Islands Forum Fisheries Agency under Article 66 of the Court’s Statute, pursuant to the Court’s decision that the Agency is likely to be able to furnish information on these questions.¹

¹ See the Court’s Press Release number 2023/48 of 20 September 2023.

II. Information regarding the Pacific Islands Forum Fisheries Agency and the importance of the advisory proceedings for its Members

(a) The Pacific Islands Forum Fisheries Agency (FFA)

3. The Pacific Islands Forum Fisheries Agency (“FFA” or “the Agency”) is furnishing information to the Court in its capacity as an intergovernmental organization, comprising predominantly Small Island Developing States (SIDS), which was established in 1979². The Agency is based in Honiara, Solomon Islands.³

4. The Agency’s vision is to enable the people of its Members particularly SIDS to enjoy “the greatest possible social and economic benefits from the sustainable use of offshore fisheries resources”, for many of whom it is their major resource.^{4 5} The Agency achieves this by strengthening national capacity and regional cooperation for the sustainable management and development of fisheries resources, in particular highly migratory fish stocks such as tuna.

5. The Membership of the Agency comprises the Pacific Small Island Developing States of Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau,⁶ Tonga, Tuvalu, Vanuatu, together with Australia and New Zealand.⁷

6. Because the FFA comprises predominantly Small Island Developing States, and was set up to assist with the sustainable management of their key marine living

² South Pacific Forum Fisheries Agency Convention 1979, 27574 UNTS 1579.

³ See the Agreement concerning the status, privileges and immunities of the South Pacific Fisheries Agency in Solomon Islands. Signed at Honiara on 10 August 1984, 27575 UNTS 1579, pp. 327-336, available [here](#).

⁴ The FFA Strategic Plan 2020-2025 is available [here](#).

⁵ The Agency’s vision is directly linked with the Vision of Pacific Forum Leaders in their 2050 Strategy for the Blue Pacific: “As Pacific Leaders, our vision is for a resilient Pacific Region of peace, harmony, security, social inclusion and prosperity, that ensures all Pacific peoples can lead free, healthy and productive lives”.

⁶ Tokelau is a non-self-governing territory of New Zealand. However, it has its own political institutions, judicial system, public services (including telecommunications and shipping), and full control of its budget. It is a full Member of the FFA. References in this statement to Small Island Developing States (SIDS) or Pacific Small Island Developing States (PSIDS) include Tokelau.

⁷ Some FFA Member are submitting their own written statements to the Court in a national capacity, which will be their definitive statements of national position.

resources, the Agency and its Members have an essential and abiding interest in the Court's advisory proceedings on this matter.

7. Indeed, the questions posed to the Court specifically acknowledge and highlight the implications of climate change for "in particular, small Island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change."⁸ Nearly all of the FFA's Membership falls within this category, with climate change presenting a significant threat to them and their vital marine living resources, as well as to the continuing viability of their States, and even their very existence in some cases.

8. In light of these impacts and threats from climate change the FFA's governing body, the Forum Fisheries Committee, decided on 25 May 2023 to request the Court's authorisation to make a written statement in accordance with article 66 of the Statute.⁹

(b) The Activities of the Pacific Islands Forum Fisheries Agency in support of its Members

9. The Agency supports its Members through a coordinated and mutually beneficial approach to the conservation, sustainable management and development of their offshore fisheries resources including regional tuna stocks. As well as its policy coordination functions in tuna fisheries management, and monitoring control and surveillance, the FFA Secretariat also has a substantial role in assisting its Members in tuna fisheries development. This includes economic analysis, appraisal and promotion of investment opportunities, and supporting of national standards that maintain access to major foreign markets.

10. In this regard the Agency and its Members have developed innovative and world-leading approaches for sustainable fisheries management, including mechanisms such as Harmonized Minimum Terms and Conditions for Access by Fishing Vessels, which contain detailed conditions for fisheries access. Conditions include the requirement for a vessel to be registered in good standing on the FFA Vessel Register so that IUU vessels¹⁰ are prohibited from fishing, and also regulate other matters such as transshipment, vessel reporting, and crew employment conditions.

11. There are also other arrangements between subgroups of the FFA

⁸ Question (b)(ii).

⁹ This followed an earlier decision tasking the FFA Secretariat to explore ways in which FFA Members could support the initiative by Vanuatu for an advisory opinion on Climate Change submitted to the Court.

¹⁰ Vessels engaged in illegal, unreported and unregulated fishing.

membership, which further reflect the commitment to sustainable fisheries management. These include the Parties to the Nauru Agreement (PNA) whose EEZs produce around 80% of the tropical tuna caught in the Western and Central Pacific Fisheries Commission (WCPFC) Area and 50% of the world's skipjack tuna. The PNA countries cooperatively and sustainably manage their tuna fisheries through purse seine and longline Vessel Days Schemes, which fix a total allowable effort across their EEZs, which is then distributed amongst the participating countries. There is also a common set of requirements for purse seine and longline vessels fishing in their EEZs so as to better sustainably manage the fishery.

(c) The crucial importance of the ocean and fisheries for FFA Members

12. The Pacific Ocean, in which FFA Members are situated, is the largest ocean area of the world. It absorbs a very large amount of heat from global warming as well as CO₂. Without the continuing health of the Pacific Ocean, this vital function could be jeopardized.

13. Pacific Small Island Developing States (PSIDS) are significant stewards and custodians of this vital ocean environment. In fact, in their Exclusive Economic Zones they manage over 10 % of the world's ocean and 20 % of the global marine jurisdictions. They are in turn heavily dependent upon their marine living resources, including their coastal fisheries and offshore fisheries.¹¹

14. This is a responsibility that FFA Members manage well. The Pacific Islands region has the largest and healthiest stocks of tuna in the world as a result of FFA Member cooperation and their focussed and sustainable fisheries management. The region is unique in its fisheries indicators which show that all of its major tuna stocks are sustainably fished, with none being overfished.

15. The significance of tuna fisheries to the Pacific Islands region, and towards sustaining the livelihoods of Pacific peoples and strengthening their national economies, can be seen from the following figures:

- (i) The value of the tuna catch taken by national fleets of FFA Members in 2022 was US\$1.8 billion;¹²

¹¹ 60% of the global tuna catch comes from the Pacific region.

¹² i.e. 31% of the total catch value for the Western and Central Pacific Fisheries Commission (WCPFC) Convention Area.

(ii) In FFA Members' waters, the majority of the value of the tuna catch (59%) was taken by national fleets of FFA Members, rather than through licensed access by foreign vessels as in the past;

(iii) Additionally, government revenue from foreign access and licence fees is currently around US\$480 million per year;

(iv) For four FFA Members over 50% of their government revenue comes from access and licensing fees, six Members are reliant on these fees for at least 25% of their government revenue, and another two Members for 20 – 25% of their government revenue;¹³

(v) 47% of Pacific households list fishing as either a primary or secondary source of income, with national fish consumption in the Pacific islands being three to four times the global average. Pacific Ocean-based shipping and tourism provides an additional US\$3.3 billion per year to the national economies of Pacific Island Countries and Territories;

(vi) Around 28,000 jobs are created in the tuna fisheries sector; and

(vii) Around 30% of global tuna supply is sourced from FFA Members' waters, which highlights the global importance of Pacific tuna.

16. The importance of these fisheries to PSIDS, and their reliance on them, is therefore very clear. Also clear are the serious impacts and threats posed by climate change.¹⁴ Damage to fisheries and loss of fish stock would therefore have significant negative impact on the income, livelihoods, food security and economies for PSIDS.

¹³ For the low-lying SIDS which are most at risk of climate change, their dependency on fisheries revenue for their economic self-determination is severely at risk from the effects of climate change. The fisheries revenues of low-lying States contribute in excess of 40% of government revenue.

¹⁴ As regards the impact of climate change on tuna, the key marine living resource for most FFA Members on which their economies are vitally dependent, attention is particularly drawn to a recently published study entitled *Pathways to sustaining tuna-dependent Pacific Island economies during climate change*, by Johann Bell et al and published in 2021 in *Nature Sustainability*. This is referred to further in paragraph 44 below.

Other articles of particular relevance include the following (see also footnote 40 below):

Lehodey, P., Hampton, J, Brill, R. W., Nicol, S., Senina, I., Calmettes, B., Portner, H. O., Bopp, L., Ilyina, T., Bell, J. D., Sibert, J., Vulnerability of oceanic fisheries in the tropical Pacific to climate change. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia.

Bell, J. D., Allain, V., Gupta, A. S., Johnson, J. E., Hampton, J., Hobday, A. J., Lehodey, P., Lenton, A., Moore, B. R., Pratchett, M. S., Senina, I., Smith, N., Williams, P. Climate change impacts, vulnerabilities and adaptations: Western and Central Pacific Ocean marine fisheries, 305 - 324. In Barange, M., Bahri, T., Beveridge, M.C.M., Cochrane, K.L., Funge-Smith, S. & Poulain, F., eds.

17. In light of these impacts and threats, the Forum Fisheries Committee meeting at Ministerial level in August 2023 specifically adopted an FFA Climate Change Strategy.¹⁵

18. Objectives of the FFA Climate Change Strategy include:

- Increasing Members' resilience and adaptive capacity to climate change by managing their fisheries in an ecologically sustainable manner, securing and protecting their rights, and maintaining the offshore fisheries' social and economic benefits despite climate change;
- Members securing and maintaining well defined offshore fisheries rights considering climate change and these rights remain secured and protected;
- Supporting Members to achieve solutions to avert, minimize and address climate change induced economic and non-economic loss and damage to their offshore fisheries resources;
- Enhancing Members' access to climate finance from external sources to fund national and regional offshore fisheries related climate activities and initiatives;
- Members' offshore fisheries sector contributes to reducing GHG emissions;
- Members' offshore fisheries are resilient to climate change through strong and effective national, and sub-regional fisheries organisations;
- Members advocate and generate strong collaborative mechanisms and partnerships for increasing the resilience of the offshore fisheries and influence positive change.

III. The impacts of climate change upon FFA Members including their fisheries

19. This section contains information relating specifically to the present and future impacts of climate change upon FFA Members, particularly its SIDS Members.¹⁶ The

2018. Impacts of climate change on fisheries and aquaculture: synthesis of current knowledge, adaptation and mitigation options. FAO Fisheries and Aquaculture Technical Paper No. 627. Rome, FAO. 628 pp.

¹⁵ The FFA Climate Change Strategy is available [here](#).

¹⁶ In its work, the FFA collaborates closely with other Pacific regional bodies and agencies. A key partner is the Secretariat of the Pacific Community (SPC), which is the region's primary scientific and technical intergovernmental organisation, whose mandate and work programme have addressed issues relating to climate change, fisheries, marine ecosystems, and coastal geoscience for decades. Scientific and technical information in this written statement draws significantly upon the work of the SPC. The SPC provided a written statement in its own capacity dated 16 June 2023 in the advisory proceedings before the International Tribunal for the Law of the Sea.

region's highest political level, the Pacific Islands Forum,¹⁷ which is the meeting of regional Heads of Government, has consistently expressed the deepest ongoing concerns about such impacts, which include:

- Threats to security, livelihoods and well-being particularly as a result of sea level rise;
- The need to preserve maritime zones in the face of sea level rise;
- Ocean warming, deoxygenation and ocean acidification
- Tuna redistributions and related implications for pelagic fisheries;
- Impacts on coastal fisheries;
- Impacts on coral reef systems;
- Marine heatwaves;
- Coastal changes and impacts on coastal communities;

(a) Threats to security, livelihoods and well-being particularly as a result of sea level rise

20. It is well documented that climate change threatens the physical integrity of some Pacific Small Island Developing States, particularly low-lying States, due to sea level rise. This has led Pacific Island Forum Leaders to characterise climate change as an existential threat¹⁸ and as the region's single greatest security threat.

(i) Increases in sea levels

21. It is observed that global sea level rise is accelerating, with the current rate exceeding 3mm/year. Moreover, global mean sea level will rise between 0.43 m and 0.84 m (depending on emission scenarios) by 2100 relative to 1986-2005. There is a 17 % chance that Global mean sea level will exceed 1.10 m under the highest emission scenario in 2100.

22. Under the highest emission scenario, the rate of sea level rise will be 15 mm per year (10– 20 mm per year, likely range) in 2100, and could exceed several cm per year in the 22nd century. For Pacific Islands, Global mean sea level is compounded by the vertical movement of the islands themselves, due to tectonic or human activities, which can increase the impact of Global mean sea level rise.

¹⁷ The governing body of the FFA, the Forum Fisheries Committee meeting at Ministerial level, reports to the Pacific Islands Forum.

¹⁸ In this regard note however paragraphs 32 to 37 below on the Continuity of Statehood and the Protection of Persons.

23. Due to projected Global mean sea level rise, extreme sea level events that are historically rare (for example, today’s hundred-year event) will become common by 2100 under all emission scenarios. More recent science presented at the UNFCCC meetings in June 2023 noted a growing body of research that confirms 2°C warming above pre-industrial is insufficient to slow rates of global sea level rise. Additionally, because of lag effects, sea level is expected to continue well after atmospheric warming stabilisation, even under scenarios of immediate and significantly reduced emissions. Only SSP1-1.9, with temperatures peaking around 1.6° C and levelling off below 1.5° C, avoids long-term detrimental impacts on Pacific SIDS from sea level rise.

(ii) Statements by Pacific Island Forum Leaders

24. In their *Ocean Statement of 2021*, Leaders called “for 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 wellbeing of the peoples of the Blue Pacific.”¹⁹

25. At their most recent annual Pacific Islands Forum Leaders’ meeting held in Rarotonga, Cook Islands, in November 2023, Leaders again focussed on the grave threats from climate change.

26. They emphasised that securing legal certainty of the Blue Pacific²⁰, in the face of the threat of climate change, is fundamental to securing the rights, entitlements, and interests of all States and peoples of the blue Pacific, and to the maintenance of global peace and security.²¹

(iii) Protecting people and communities

27. At their most recent meeting, Leaders also addressed the human rights aspects of the situation. They acknowledged that protecting persons and communities affected by climate change related sea-level rise involves protecting, promoting, and fulfilling their human rights, including civil, political, economic, social and cultural rights, and also protecting their culture, cultural heritage, identity and dignity, and

¹⁹ Pacific Islands Forum Leaders Ocean Statement 2021, section on “Urgent climate change action”. The text of the Forum Leaders Ocean Statement 2021 is available [here](#).

²⁰ The “Blue Pacific” is a term to describe the region of the Pacific Ocean, its island nations, and their collective interests. The Blue Pacific concept regards the Pacific Ocean and its island nations not just as a collection of individual States but as a single, interconnected entity that is united by shared geography, culture and challenges.

²¹ Fifty-second Pacific Islands Forum Communique, 9 November 2023, paragraph 22.

meeting their essential needs, including through international cooperation.²²

28. Leaders further acknowledged that States carry an important duty in ensuring protection of their people, and continuity of statehood is necessary and fundamental for that protection to be implemented and to endure.²³

29. Leaders recognised the threats and adverse impacts of climate change and sea-level rise as the defining issue that imperils the lives, livelihoods and wellbeing of Pacific peoples, communities and countries, and undermines the full realisation of a peaceful, secure and sustainable future for the region.²⁴

30. They also underlined that coastal States, particularly Small Island Developing States and low-lying States, are disproportionately impacted and specially affected by sea-level rise and climate change, and that Members of the Pacific Islands Forum are committed to reducing and preventing these impacts and strengthening the resilience of their communities.²⁵ Therefore, it is clear that leaders understand that PSIDS are already experiencing and will continue to endure loss and damage to their identity, culture, sovereignty, peace, dignity and access to human rights due to climate change impacts.

(iv) The Request for an Advisory Opinion

31. Noting the urgency of the climate threat and the need for accelerated global climate action and implementation of the Paris agreement, and recalling their decisions in 2022, Leaders at their most recent meeting also “recalled the historic occasion of the unanimous adoption of UN General Assembly Resolution A/77/L.58 on 29 March 2023 requesting the International Court of Justice (ICJ) to provide an advisory opinion on the obligations of States under international law to protect the rights of present and future generations against the adverse impacts of climate change”.²⁶ Leaders strongly encouraged the participation of all Forum Members in the advisory proceedings.²⁷

(v) Continuity of Statehood and the Protection of Persons

²² 2023 Declaration on the Continuity of Statehood and the Protection of Persons in the Face of Climate Change-Related Sea-Level Rise, paragraph 10. The text of the Declaration is available [here](#).

²³ Ibid, paragraph 11.

²⁴ Ibid, paragraph 5.

²⁵ Ibid, paragraph 4.

²⁶ Fifty-second Pacific Islands Forum Communique, 9 November 2023, paragraph 26.

²⁷ Ibid, paragraph 27.

32. In addition to their statements above, at their most recent annual Pacific Islands Forum Leaders' meeting, Leaders recalled their decision in 2022 that due consideration of the complex issues of sea-level rise in relation to statehood and the protection of persons should be guided and informed by applicable principles and norms of international law and relevant international frameworks and standards, and considered and endorsed the *2023 Pacific Islands Forum Declaration on the Continuity of Statehood and the Protection of Persons in the Face of Climate Change-Related Sea-Level Rise*.²⁸

33. The Declaration on the Continuity of Statehood is grounded on existing principles and elements of current international law to declare that the statehood and sovereignty of Forum Members will continue, and the rights and duties inherent thereto will be maintained, notwithstanding climate change-related sea-level rise.

34. The Declaration also expresses a commitment by Forum Members, both individually and collectively, to protecting persons affected by climate change-related sea-level rise including with respect to human rights duties, political status, culture, cultural heritage, identity and dignity, and meeting essential needs.

35. Leaders recognised that under international law there is a general presumption that a State, once established, will continue to exist and endure, and maintain its status and effectiveness, and that international law does not contemplate the demise of statehood in the context of climate change-related sea-level rise.²⁹

36. They further recognised that continuity of statehood in the face of climate change-related sea-level rise is consistent with important principles and rights of international law, including the right of peoples to self-determination, the right to a nationality, the protection of territorial integrity and political independence, principles of equity and fairness, the maintenance of international peace and security which in turn requires stability and international relations, the right of a State to provide for its preservation, the duty of cooperation, the sovereign equality of states, and permanent sovereignty over natural resources.³⁰

37. Leaders called upon the international community to support the Declaration and to cooperate in achieving its purposes, consistent with the duty to cooperate in the principles of equity and fairness.³¹

²⁸ Ibid, paragraph 24.

²⁹ 2023 Declaration on the Continuity of Statehood and the Protection of Persons in the Face of Climate Change-Related Sea-Level Rise, paragraph 8.

³⁰ Ibid, paragraph 9.

³¹ Ibid, paragraph 16.

(b) The preservation of Maritime Zones in the face of sea level rise

38. There has been considerable concern about the need to ensure that the maritime zones of FFA Members are preserved and are not adversely affected by climate change. This concern arises from the inundation of geographic features from which maritime zones are measured, as a result of sea level rise.

39. At their most recent meeting, Pacific Forum Leaders reaffirmed their *2021 Declaration On Preserving Maritime Zones In The Face Of Climate Change-Related Sea-Level Rise*³², which proclaims that their maritime zones, as established and notified to the Secretary General of the United Nations in accordance with the United Nations Convention on the Law of the Sea, and the rights and entitlements that flow from them, shall continue to apply, without reduction, notwithstanding any physical changes connected to climate change-related sea-level rise.^{33 34}

40. Leaders have greatly valued the work done by the International Law Commission in this regard. They committed to continued support to and engagement with the ongoing study by the International Law Commission, including at its upcoming 75th session (2024), on the topic "Sea-level rise in relation to international law".³⁵

(c) Ocean warming, deoxygenation and ocean acidification

41. The most recent Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6 Report) shows that ocean warming, ocean acidification and deoxygenation will continue to increase in the 21st century at rates dependent on future emissions of carbon dioxide and greenhouse gases. The IPCC AR6 states with high confidence that ocean warming, and ocean acidification have already affected food production including shellfish aquaculture and fisheries in some regions. Such impacts have already been observed by FFA Members. The capacity of oceans to absorb carbon dioxide will also be diminished under higher warming scenarios. Indeed, the IPCC consistently reports impacts and risks to ocean ecosystems from climate change under various warming scenarios. Observations

³² The text of the Declaration is available [here](#).

³³ Ibid, paragraph 7.

³⁴ The operative provision of this Declaration has been enshrined in a treaty-level instrument, namely the *Agreement for the establishment of the Commission of Small Island States on Climate Change and International Law*, 56940 UNTS 3447. The text is available [here](#).

³⁵ Information regarding the ILC study is included in documents received by the Court from the Secretariat of the United Nations, PART IV(F) Sea-level rise in relation to international law.

suggest a higher rate of deoxygenation due to warming than simulated by Earth Climate models.³⁶

42. The ocean has taken up between 20-30% of total anthropogenic CO₂ emissions since the 1980s causing further ocean acidification. 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 % of the ocean surface area.

43. Continued carbon uptake by the ocean by 2100 is virtually certain to exacerbate ocean acidification. Open ocean surface pH is projected to decrease by around 0.3 pH units by 2081-2100, relative to 2006-2015. This will have significant impacts, including on coral reef systems, which will affect ocean health and coastal fisheries on which many PSIDS communities are dependant.³⁷

(d) Tuna redistributions and related implications for pelagic fisheries

44. Recent science in a published study called *Pathways to sustaining tuna-dependent Pacific Island economies during climate change*³⁸ highlights the impacts of climate change on tuna in the region under different scenarios. Climate change is driving tuna further to the east and into the high seas, threatening the loss of economic and food security of Pacific Small Island Developing States:

(i) Climate-driven redistribution of tuna threatens not only to disrupt Pacific Small Island Developing States' economies, but the sustainable management of the world's largest tuna fishery.

(ii) By 2050, under a high greenhouse gas emissions scenario (RCP 8.5), the total biomass of three tuna species in the waters of ten Pacific Small Island Developing States could decline by an average of 13 % (range = -5 % to -20 %), while a greater proportion could occur in the high seas.

³⁶ Schmidtko S., Stramma L., Visbeck M. (2017). Decline in global oceanic oxygen content during the past five decades. *Nature* 542: 335–339. <https://doi.org/10.1038/nature21399>

³⁷ The SPC (www.spc.int) has noted that a lack of specific responses to ocean warming, acidification and deoxygenation across the United Nations Framework Convention on Climate Change (UNFCCC) poses a substantial and currently unaccounted for risk to coastal community resources, well-functioning marine ecosystems, seafood security and economies. SPC has also noted that lack of recognition of acidification and deoxygenation by the UNFCCC risks exacerbating these effects through ocean-based climate interventions that seek mitigation through enhanced primary production or carbon disposal in the deep ocean, as well as geoengineering proposals that would alter ocean chemistry with uncertain consequences.

³⁸ See footnote 14 above.

(iii) The potential implications for Pacific Island economies in 2050 include an average decline in purse-seine catch of 20 % (range = –10 % to –30 %), which implies an average annual loss in regional tuna-fishing access fees of USD 90 million (range = –USD 40 million to –USD 140 million) and reductions in government revenue of up to 13 % (range = –8 % to –17 %) for individual Pacific Small Island Developing States.

(iv) A rise in ocean temperatures is also expected to alter the distribution of other transboundary species in the Pacific Ocean that contribute to domestic food security needs.³⁹ There is also significant uncertainty as to what impact changes in ocean temperatures might cause pelagic stocks upon which tuna feed.⁴⁰ Current estimates of tuna displacement may be grossly underestimated due to this uncertainty.⁴¹

(v) The impacts are reduced if greenhouse gas emissions are reduced. Redistribution of tuna under a lower-emissions scenario (RCP 4.5) is projected to reduce the purse-seine catch from the waters of Pacific Small Island Developing States by an average of only 3 % (range = –12 % to +9 %), indicating that even greater reductions in greenhouse gas emissions, in line with the Paris Agreement, would provide a pathway to sustainability for tuna-dependent Pacific Island economies.

(vi) Not achieving greenhouse gas emissions, in line with the Paris Agreement, will not only impact the capacity for Pacific SIDS to generate income from tuna fisheries but also significantly increase the management costs for these fisheries as greater high seas monitoring, control and surveillance (MCS) is required⁴². In addition, increased uncertainties in stock redistribution and abundances will likely compromise the effectiveness of current management practices that have ensured the sustainability of WCPFC tuna stocks.⁴³ The loss of income and government revenue compounded with rising food insecurity and health concerns poses a significant risk of harm to PSIDS.

(e) Impacts on Coastal Fisheries:

³⁹ Palacios-Abrantes et al. 2022. *Global Change Biology*. <https://doi.org/10.1111/gcb.16058>

⁴⁰ See Vaihola, S.; Kininmonth, S. 'Climate Change Potential Impacts on the Tuna Fisheries in the Exclusive Economic Zones of Tonga' *Diversity* **2023**, 15, 844. <https://doi.org/10.3990/d15070844>

⁴¹ See footnote 14 above.

⁴² Goodman et al 2022. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2022.1046018>

⁴³ Cheung et al 2018. *Global Change Biology*. <https://doi.org/10.1111/gcb.14390>

45. The decline in warm-water coral reefs is projected to greatly compromise the services they provide to society, such as food provision. Increases in the risks for seafood security associated with decreases in seafood availability are projected to elevate the risk to nutritional health in some communities highly dependent on seafood. Such impacts compound any risks from other shifts in diets and food systems caused by social and economic changes and climate change over land.

46. Climate change impacts on marine ecosystems and their services put key cultural dimensions of lives and livelihoods at risk, including through shifts in the distribution or abundance of harvested species and diminished access to fishing or areas. This includes potentially rapid and irreversible loss of culture and local knowledge and Indigenous knowledge, and negative impacts on traditional diets and food security.

(f) Impacts on Coral Reef Systems

47. The Pacific Region is home to approximately 25% (about 66,000 km²) of the coral reefs on the planet and is dotted with thousands of islands that differ climatically and geologically. Many of these reefs are considered to be in good health because of their remote location and low exposure to human impacts.⁴⁴

48. The ocean warming trend documented in the IPCC Fifth Assessment Report (AR5) has continued, and this has been documented in AR6. Since 1993, the rate of ocean warming and thus heat uptake has more than doubled and is attributed to anthropogenic forcing. The major medium to long-term threats to coral reefs at the global level arises from climate change-driven intensification of the disturbance regime, including increasing sea surface temperature and frequency of severe tropical cyclones.⁴⁵

49. The impact of rising sea surface temperatures in particular leads to an increase in frequency and severity of coral bleaching events as reported in several reef areas. Corals are sensitive to changes in sea temperature, and anomalies of 1-2°C greater than normal summer highs can cause severe coral bleaching, a stress response that breaks the zooxanthellae-coral symbiotic relationship and may result in coral mortality depending on the intensity and duration of the warming event.⁴⁶ The ocean

⁴⁴ Moritz C, Vii J, Lee Long W, Tamelander J, Thomassin A, Planes S (editors). (2018) Status and Trends of Coral Reefs of the Pacific. Global Coral Reef Monitoring Network (available at: <https://germn.net/wp-content/uploads/2022/06/Status-and-Trends-of-Coral-Reefs-of-the-Pacific-2018.pdf>)

⁴⁵ Ibid.

⁴⁶ Ibid.

will continue to warm throughout the 21st century. By 2100, the top 2000 metres of the ocean are projected to take up 2-7 times more heat (depending on the emission scenario) than the observed accumulated ocean heat uptake since 1970.

50. Warm-water coral reefs are currently impacted by extreme temperatures and ocean acidification. Marine heatwaves have already resulted in large-scale coral bleaching events at increasing frequency causing worldwide reef degradation since 1997, and recovery is slow (more than 15 years) if it occurs.

51. Almost all warm-water coral reefs are projected to suffer significant losses of area, biodiversity and local extinctions, even if global warming is limited to 1.5° C.⁴⁷ With increasing frequency and intensity of bleaching events, the near future coral reefs in the Pacific may struggle to recover quickly enough between consecutive events, leading to an accelerated rate of coral reef decline.⁴⁸ The species composition and diversity of remaining reef communities is projected to differ from presentday reefs.

(g) Marine Heatwaves

52. Globally, marine heatwaves have doubled in frequency and have become longer-lasting, more intense and more extensive. It is very likely that between 84-90% of marine heatwaves that occurred between 2006 and 2015 are attributable to the anthropogenic temperature increase.

53. Marine heatwaves are projected to further increase in frequency, duration, spatial extent and intensity (maximum temperature). Climate models project increases in the frequency of marine heatwaves by 2081-2100, relative to 1850-1900, by 20 to 50 times (depending on the emission scenario). The tropical region is a region where this increase will be the largest. The intensity of marine heatwaves is projected to increase about 10-fold under the high emission scenario by 2081-2100, relative to 1850-1900. This will further impact on fisheries and as a consequence on FFA Members.

(h) Coastal changes and impacts on Coastal Communities

54. Coastal communities in the Pacific region have already been significantly affected by the range of climate change impacts to date including those that have manifested in the ocean – such as wave inundation, and coastal erosion, deterioration of coastal food systems and fresh water sources. These climate change-exacerbated

⁴⁷ The effects of these changes on coastal fisheries and local communities are noted in paragraphs 45 and 46 above.

⁴⁸ Moritz C et. al, footnote 44.

environmental impacts have forced many communities to abandon their ancestral lands and important traditional food sources, and relocate to safer areas, often resulting in the loss of cultural heritage, cultural identity, cultural practices, social cohesion, and economic stability and insecurity.

55. As Pacific Leaders have said,⁴⁹ the displacement of these communities poses significant challenges in terms of safeguarding human rights, ensuring access to basic services, and maintaining community structures. There are also many implications for receiving communities and the ability of nations to effectively relocate communities where there are limited land resources and highly complex land tenure systems.

56. Risk related to rise in Global mean sea level (including erosion, flooding and salinisation) is expected to significantly increase by the end of this century along all low-lying coasts in the absence of major additional adaptation efforts.

57. While well-designed coastal protection is very effective in reducing expected impacts from extreme sea level events, it is generally unaffordable for rural and poorer areas. The IPCC AR6 also states that “[a]daptation options that are feasible and effective today will become constrained and less effective with increasing global warming. With increasing global warming, losses and damages will increase and additional human and natural systems will reach adaptation limits. Maladaptation can be avoided by flexible, multi-sectoral, inclusive, long-term planning and implementation of adaptation actions, with co-benefits to many sectors and systems.”

58. In conclusion, there has already been observed and experienced displacement of coastal communities in the context of climate change. The impacts of climate change, including ocean warming, sea level rise, and ocean acidification, have had profound effects on the marine environment and biodiversity, resulting in adverse consequences for the livelihoods and well-being of coastal communities, including their very security and survival. The subsequent consequences that follow displacement also go beyond impacts on coastal communities, particularly as the climate crisis expands. It is therefore incumbent upon the international community to take urgent and necessary action to deal with anthropogenic emissions of greenhouse gases and their consequences particularly with regard to Small Island Developing States.

⁴⁹ See for example paragraph 27 above.

CHAIR OF THE PACIFIC ISLANDS FORUM FISHERIES AGENCY

Mr Glen Joseph, Forum Fisheries Committee Chair

15 March 2024

ON BEHALF OF THE AGENCY:

Australia
Cook Islands
Federated States of Micronesia
Fiji
Kiribati
Marshall Islands
Nauru
New Zealand
Niue
Palau
Papua New Guinea
Samoa
Solomon Islands
Tokelau
Tonga
Tuvalu
Vanuatu