

FFA CONTRIBUTION TO SECRETARY GENERAL REPORT ON SUSTAINABLE FISHERIES MANAGEMENT IN THE FACE OF CLIMATE CHANGE.

Introduction

organisation which was established in 1979. Its role is to facilitate regional cooperation and coordination on fisheries policies between Member countries, so as to achieve conservation and optimum utilisation of marine living resources, in particular highly migratory fish stocks, for the benefit of the people of the Pacific Islands region, in particular developing countries.

their major resource.

To this end, the Agency assists its Member governments and administrations in applying a coordinated and mutually beneficial approach to the conservation, management and development of 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 Member countries 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. The FFA Secretariat is based in Honiara, Solomon Islands.

The Membership of the Agency predominantly comprises Pacific Small Island Developing States (SDS). Its Members are Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Australia and New Zealand.

FFA Members are parties to the Western and Central Pacific Fisheries Commission, and as such contribute to the development and enforcement of Conservation and Management Measures, and are responsible for complying with these provisions.

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Pacific Island Forum Leaders, comprising the Heads of State and Government of the region, have characterised Gimate change as the single greatest threat to the livelihood, security and wellbeing of Pacific people. Gimate change has noticeable effects on tuna fisheries. Continued

greenhouse gas emissions are projected to alter the abundance and distribution of tuna species, shifting biomass from WCPO to the Eastern Pacific Ocean and from national jurisdictions to the high seas. In a business-as-usual scenario, 20% of tuna caught in Exclusive Economic Zones (EEZ) of Pacific Island Countries and Territories (PICTs) is expected to move to the high seas, a figure reduced to 3% with global mitigation efforts. Recognizing the comprehensive impact of climate change, collaborative efforts are essential to proactively manage risks and enhance the resilience of offshore fisheries.

The crucial importance of sustainable fisheries management for FFA Members

Pacific Small Island Developing States (PSDS) are vitally dependent upon the ocean environment in which they live, and its fisheries resources. In their Exclusive Economic Zones they manage

heavily dependent upon their marine living resources, including their coastal fisheries and offshore fisheries[1] which are now threatened by dimate change.

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.

The significance of tuna fisheries to the Pacific Islands region, and in 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;[2]

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atch (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; [3]

(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

highlights the global importance of Pacific tuna.

The importance of these fisheries to PSDS, and their reliance on them, is therefore very clear. Also clear are the serious impacts and threats posed by climate change.[4] Damage to fisheries and loss of fish stock would therefore have a significant negative impact on the income, livelihoods, food security and economies for PSDS

The impacts of climate change upon the sustainable management of FFA Members' fisheries

As noted above, the Pacific Islands region

has consistently expressed its deepest ongoing concerns about the present and future impacts of climate change upon its Members, particularly its SDS Members.[6] These concerns include the grave impacts of sea level rise, including resulting threats to security, livelihoods and wellbeing, and the need to preserve maritime zones in the face of sea level rise.

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There are also deep concerns about the impacts of climate change on the sustainable manag include:

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) Ocean warming, deoxygenation and ocean acidification

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 110\$3017 reWaur-GB h thh o75(IPCC)-4()-3(w)5(armin



which will affect ocean health and coastal fisheries on which many PSIDS communities are dependent.[8]

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catch from the waters of Pacific Small Island Developing States by an average of only 3 %

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 SDS 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 required[13]. In addition, increased uncertainties in stock redistribution and abundances will likely compromise the effectiveness of current management practices that have ensured the sustainability of WOPFC tuna stocks[14]. The loss of income and government revenue compounded with rising food insecurity and health concerns poses a significant risk of harm to PSIDS.

(c) Impacts on Coastal Fisheries

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.

Of imate 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.

(d) Impacts on Coral Reef Systems

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 dimatically and geologically. Many of

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these reefs are considered to be in good health because of their remote location and low exposure to human impacts.[15]

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 dimate change-driven intensification of the disturbance regime, including increasing sea surface temperature and frequency of severe tropical cyclones.[16]

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-coraG/(c)3(or)-7-7(e)4(i6(t)-4(emperao2gs)-9(

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(e) Marine Heatwaves

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Commitments to further strengthen climate action and building resilience to the tuna fisheries

Strong governance systems that consider dimate change are also identified as a robust archetype for increasing resilience [20]. The PICTs are taking concrete steps in this regard.

The Regional Roadmap for Sustainable Pacific Fisheries, endorsed in 2015 by Pacific Islands Forum Leaders, was designed to 1) optimise the benefits of tuna resources for economic development, government revenue and employment; 2) ensure that growing human populations have enough fish for food security; and 3) sustain livelihoods derived from small-scale fisheries. This roadmap gives direction to Pacific Island Forum Members and FFA Members on a dear pathway for increasing the resilience of the sector.

adopted an FFA Qimate Change Strategy. This Strategy guides Members on progressing work on 6 priority areas 1) Actioning Qimate Change Adaptation and Resilience, which include ensuring ecological sustainability in new climate change scenarios, ensuring the maintenance of and securing well defined offshore fisheries rights, and ensuring the economic and social benefits FFA Members receive from offshore fisheries are maintained, 2) Achieving Qimate Justice, 3) Accessing Qimate Finance, 4) Contributing to Mitigation, 5) Capacity Building and Institutional Strengthening, and 6) Advocacy and Engagement.

There has been continued leadership by FFA at WOPFC both by putting forward proposals to strengthen and progress the sustainable management of the fisheries and by including dimate change in WOPFC discussions. In 2019 the FFA led the adoption of the WOPFC dimate Change resolution. The Resolution commits the OOMs to progress the mainstreaming of dimate change into the WOPFC work, through ensuring it is discussed by all its Subsidiary Bodies. WOPFC20 agreed to develop a workplan for the implementation of the Resolution, which is being co-lead by the Republic of the Marshall Islands.

FFA is also collaborating with SPC on research to understand the possible impacts of climate change on sustainability, social and economic benefits and rights. Initial assessments suggest regional economic conditions, as well as conditions for certain PICTs, will deteriorate over time due to climate-driven tuna redistributions (for example through reduced government revenue). However, these forecasts rely on assumptions which do not account for transitional pathways,

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and factors such as changing fleet dynamics, potential management responses, global economic trends, and technological advancements.

The collaboration with SPC includes an exploration of how fishing fleets can best adapt to evolving tuna distribution stands. Understanding and modelling these adap5(c)3(oll.0000P)-4(p)-20a(gS9)-41())

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Footnotes

[1] 60% of the global tuna catch comes from the Pacific region.

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

[3] For the low-

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

[6] In its work, the FFA collaborates closely with other Pacific regional bodies and agencies. A key partner is the Secretariat of the Pacific Community

and technical intergovernmental organisation, whose mandate and work programme have addressed issues relating to dimate change, fisheries, marine ecosystems, and coastal geoscience for decades. Scientific and technical information in this document draws significantly upon the work of the SPC.

[7] 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

[8] 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.

[10] Palacios-Abrantes et al. 2022. Global Change Biology. https://doi.org/10.1111/gcb.16058

https://doi.org/10.3990/d15070844

[13] Goodman et al 2022. Frontiers in Marine Science. doi.org/10.3389/fmars.2022.1046018

[14] Cheung et al 2018. Global Change Biology. https://doi.org/10.1111/gcb.14390

[15] 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://gcrmn.net/wp-content/uploads/2022/06/Status-and-Trends-of-Coral-Reefs-of-the-Pacific-2018)

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