Appendix 4-D A description of each barrier preventing governments from understanding and responding to the implications of climate-driven tuna redistribution for their communities and their economies

Component B	Barrier	Description
1	Limited knowledge regarding the redistribution of tuna in response to climate change-induced changes in ocean bio-physical environmental variables.	GCF Participating Countries currently lack information about future shifts in industrial tuna fishing and landing activities as a response to the redistribution of tuna biomass due to climate change. Countries require advance warning of these shifts to adapt their food security and investment strategies in line with future industrial fishing opportunities and patterns. A risk is that industrial fishing vessels will visit ports in these countries less frequently as climate change redistributes tuna further to the east. To address this, new or revised policies and strategies need to be put in place (see Section 2.4). In addition, redistribution of tuna needs to be accommodated in management arrangements adopted by WCPFC. Harvest strategies, which are currently under development for target tuna species, need to factor stock redistribution dynamics into assessments to optimise the effectiveness of harvest strategies.
2	Lack of clear recourse pathways to address the re-distribution of tuna from EEZs to the high seas.	Lack of a clear pathway for high-level international legal principles, activated through complex multilateral negotiations at the Regional Fisheries Management Organisation (RFMO) level[i], to compensate Pacific Island countries as distant water fleets progressively shift their operations from Pacific Island country EEZs to follow the fish in pursuit of higher profits because they do not need to pay fishing access fees on the high seas. This barrier is significant but is similar to one that PICs have a track record of overcoming successfully in the past using two main strategies. Firstly, through maintaining strong regional solidarity, which A description of each barrier preventing governments from understanding and responding to the implications of climate-driven tuna redistribution for their communities and their economies should enable Pacific Island countries to have more leverage over the fishing limits in the high-seas. In 2024, the WCPFC is again turning its attention to the allocation of purse-seine fishing effort on the high seas. This provides an opportunity for PICs to strongly influence an adaptive management approach to regulating effort on the high seas in the WCPFC Convention Area while at the same time preserving the interests of PIC coastal States. Secondly, the existing strong climate justice narrative should be elaborated to include impacts on tuna stocks, the profound role that

		these fish play in the context of Pacific Island countries as a critical food security and economic resource. This can be legally pursued through additional processes, such as the United Nations Framework Convention on Climate Change (UNFCCC) litigation on 'loss and damage'. Pacific climate champions, including upcoming talents, should be supported to advance their skills and remain focused on the region to ensure that PICs retain the benefits from tuna stocks even if they shift substantially into the high seas.
3	Lack of long-term financial planning, including lack of plans around compensation mechanisms beyond the current scheme applied to fisheries access (the VDS).	Lack of long-term financial planning, including lack of plans around compensation mechanisms beyond the 'Vessel Day Scheme' (VDS) operated by the Parties to the Nauru Agreement (PNA), are also adaptation barriers. Maintaining the regional solidarity that is needed to secure government revenue earned by the eight participating PICs from the VDS in the long term will require ongoing economic analysis of the benefits of the VDS to different economies, and how different historical catches vs future catch scenarios will benefit PNA member countries[ii] and other PICs as a whole and individually. This underlines the need for the AWS to also have strong socio-economic modelling components to show the difference between short-term nationalistic outcomes compared to the benefits to each country and the region as a whole from long-term collaboration and solidarity. This socio-economic modelling should include options for national or regional saving schemes, such as sovereign wealth funds, and additional compensatory mechanisms that could kick in when trigger conditions, as predicted by the AWS, begin to emerge.
4	Regional solidarity threatened by poor governance or vested interests	Regionalism (as the basis of the VDS and compensatory mechanisms) can be weakened by private interests and/or poor governance. To overcome this barrier (in addition to the socioeconomic component above) the AWS needs to be accompanied by a strong capacity-building programme in the region that disseminates scientific information to the countries and leads the design, preparation, adaptation and monitoring plans in a transparent, public and credible way both nationally, regionally and internationally.
5	Inadequate scientific data and evidence	One of the main barriers identified in the region is the lack of scientific data, and with it the authority, to raise the alarm regarding shifts in tuna biomass in response to climate change. Whilst this task is part of the regional agencies' day to day work, they currently lack the capacity to make progress on these issues, even though it is now encouraged by the WCPFC Resolution on climate change.[iii] This barrier will be overcome with development of the Programme AWS, because the new information system will be

		deeply embedded in the regional process mandated by the WCPFC and executed by SPC, the Pacific Islands Forum Fisheries Agency (FFA) and other agencies. SPC has the authority to raise the alarm with the emerging science and FFA has the authority to lead and work on adaptive fisheries management strategies. Once the region has identified and agreed on adaptive management measures, these can be put forward for adoption by WCPFC. The WCPFC is the main regulatory body in the region for the management of tuna stocks and any long-term mechanisms need to be embedded in the Commission.
6	Increasing private sector participation and support for environment-related data collection and science	The private sector and its willingness to contribute to regional data collection and climate science can be a barrier due to perceived costs to daily operations associated with the data collection by industry and disruptions to normal vessel operations. This can be overcome initially through collaborations between SPC, FFA and the industry to determine the best modality for data collection in ways that maximise cost-benefit for industry. Obtaining accurate cost-benefit information will help justify the costs of data collection, and any necessary contributions to the costs of maintaining the AWS (possibly through a matching funding or co-financing strategy). Insert a cross reference here to the section on sustainability mechanisms.
7	Lack of capacity building opportunities	Lack of career paths and loss of talent are among the biggest threats to regional capacity building and maintaining strong negotiating positions at multilateral fora. Regional programmes that aim to put Pacific climate champions and leaders at the forefront of international legal and moral debates will help to address this.

[i] In this context they are the Western and Central Pacific Fisheries Commission (WCPFC) and the Inter American Tropical Tuna Commission (IATTC)

[ii] These are eight PICs with strategic interest in purse seine fishing; Papua New Guinea, Solomon Islands, Nauru, Tuvalu, Palau, Federated States of Micronesia, Kiribati, the Republic of Marshall Islands.

[iii] WCPFC Resolution 2019-01. Noting that WCPFC resolutions are voluntary and non-binding www.wcpfc.int/doc/resolution-2019-01/resolution-climate-change-it-relates-western-and-central-pacific-fisheries