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The South Pacific Commission's tuna programmes post the Skipjack Programme

The Skipjack Programme evolved into the Tuna and Billfish Assessment Programme (TBAP) in September 1981. This significant change acknowledged the need to extend the fundamental data collection and research work, started through the Skipjack Programme, to other important stocks of tropical and subtropical oceanic tuna and billfish species. In the mid-late 1990s, the programme further evolved with the inclusion of tuna fishery bycatch and ecosystem research, including data collection. This evolution was accompanied by a further name change to the SPC Oceanic Fisheries Programme (OFP). The OFP co-exists with the SPC Coastal Fisheries and Aquaculture Programme within what is now called the Fisheries, Aquaculture and Marine Ecosystems Division.

Data collection for skipjack research continued to be enhanced after the completion of the Skipjack Programme. This enhancement acknowledged that the fishery data collected by SPC throughout the region underpins not only the scientific work conducted by the SPC but also the work of other agencies involved in the management, including compliance, of the region's tuna fisheries.

The complex nature of the stocks of skipjack and other tuna species, coupled with increasing catches and the value of these catches to Pacific Island nations, created an ever-expanding need for data to ensure stocks could continue to be sustainably harvested at optimum levels.

Logbook data established in Pacific Island countries during the Skipjack Programme continued to be collected and improved, particularly for the growing purse seine fishery.

There were several new tagging programmes in the decades following the Skipjack Programme. These included the Regional Tuna Tagging Programme (RTTP: 1989–1992) and the Pacific Tuna Tagging Project in more recent decades. Data on skipjack size, stomach content, otolith and tissue samples were increasingly collected through the establishment of observer data collection in the mid-1990s. Port sampling data collection was also established in numerous Pacific Island and Asian ports where tuna were unloaded during this time. These data continue to be an important aid to the management of the total fishery.

Another notable addition since 2010 has been the critical advisory role of the SPC in the enhancement by the Western and Central Pacific Fisheries Commission (WCPFC) of data collection systems for monitoring the diverse, complex domestic tuna fisheries of Indonesia, the Philippines and Vietnam. These labour-intensive fisheries account for 25–30 per cent of the total western and central Pacific tuna catch.

Steadily increasing skipjack catches from the area of the SPC (from 230,000 tonnes in 1975, when efforts commenced to have the Skipjack Programme funded, to around 1,200,000 tonnes in 2023, the most recent year for which complete data are available), with a value at the point of first sale of $2.2 billion, confirm that it is clearly the largest tuna fishery in the world. As such, and with various detailed sources of data collected from the fishery, the SPC data holdings increased substantially over time. It has been acknowledged for several years as the most comprehensive set of tuna fishery data in the world.

The need for enhanced access to the various fisheries data and significant advances in information technology have greatly increased the complexity of the SPC's data management systems. These developments have required all parties' agreement on the standardisation of data submitted and collected, data dissemination rules, and the development of many data query tools that facilitate access to certain datasets by authorised, bona fide users. The SPC

also compiles and manages a suite of public domain datasets on behalf of the WCPFC. These include annual catch estimates, aggregated catch and effort data, and observer data. These public domain datasets are regularly accessed by various external researchers from throughout the world.

Assessment of the skipjack stock had been progressively implemented since the initial estimate of 3 million tonnes by the Skipjack Programme in August 1981. From this time on, the SPC continued these assessments for skipjack and introduced assessments for other tuna stocks. The methodologies within the assessment model software (MULTIFAN-CL) were also expanded with the integration of both fisheries-dependent data (for example, logbook, port sampling and observer data) and fisheries-independent data (for example, tagging) from various sources. An assessment for each species has been typically conducted over a three- to four-year cycle and, since 2005, reviewed by WCPFC members at the annual Scientific Committee Meeting. This review includes reaching an agreement on the scientific advice on the status and management of the stocks of skipjack and other tuna and billfish species. The SEAPODYM model has also been developed to further assess the population dynamics of western and central Pacific tuna, particularly skipjack, using high-resolution environmental and fisheries data.

The development and application of these modern stock assessment approaches were made possible by the extensive fishery data collection system that the SPC had established. However, just as important for stock assessment and related models was the accumulation of information on key aspects of the biology of those species. This work began with the Skipjack Programme and has been continued by subsequent SPC tuna programs.

In the past 20 years, OFP, with the support of WCPFC and individual members, has expanded a range of biological research studies on subjects such as age and growth (through analysing growth rings on otoliths [ear bones]), reproductive biology, movements and population genetics. The biological sampling required for these studies was facilitated by the large-scale tagging, fisheries observer and port sampling programmes operating throughout the Asia-Pacific region. A key recent tool to support biological research has been the establishment of the Pacific Marine Specimen Bank, hosted at the SPC headquarters in Noumea, and which currently consists of more than 300,000 curated tissue samples from tuna and other pelagic species collected from fishing and research vessels operating in the region. These samples are made available to researchers on request.

In the past decade, the SPC has had the primary role in developing harvest strategies for the four main tuna stocks in the WCPFC region; a harvest strategy is a recognised, formal process for facilitating pre-emptive decisions on current and future management actions and outcomes to increase the achievement of agreed management objectives through actions in the fishery.

Rigorous formal reviews of the assessments conducted by the SPC through the WCPFC Scientific Committee have resulted in agreement that the skipjack stock, and the stocks of the other three main tuna species (yellowfin tuna, big-eye tuna and albacore) in the western and central Pacific Ocean (WCPO), are not 'overfished' and that overfishing is not occurring. This status has been confirmed by repeated assessments since the first by the Skipjack Programme in 1981 (see Chapter 19). Over this time, the WCPO has been the only ocean region in the world where all tuna stocks have this 'healthy' status. It is therefore acknowledged to be the best-managed tuna fishery in the world (acknowledging that the four tuna stocks in the Indian Ocean have only very recently attained similar status).

Since the establishment of the WCPFC in 2004, having the SPC as the region's independent science service provider (distinct from the WCPFC, the Pacific Islands FFA and Parties to the Nauru Agreement [PNA]) has had recognised benefits. The SPC is apolitical, and it is therefore able to produce the scientific outputs, deal with the facts and largely avoid damage from conflicting political influences. The SPC continues to deal directly with its Pacific Island membership on technical assistance (in addition to being contracted to the WCPFC for its scientific work). Most distant-water fishing nations, some begrudgingly, acknowledge the benefits of the independence of the SPC in providing the science and data management.

Another benefit of an independent SPC, which is not commonly known, is that it has benefited from receiving valuable, confidential historical datasets from some countries, purely for research work. These datasets have not been provided to the WCPFC or other agencies, but they have contributed to the assessments carried out by the SPC, from which all countries benefit.

When the WCPFC was established, the Pacific Island countries stated that their consolidated historical logbook data (held and managed on their behalf by SPC) for foreign fleets should not be provided to the WCPFC, since it was the responsibility of the flag distant-water fishing nation states to submit these data (which they only started to do from 2017 onwards).

The SPC therefore holds a much more complete, consolidated historical database of various sources of data, which are used for scientific purposes, than the WCPFC or any other organisation.

In 2026, more than 80 staff are employed in the SPC's OFP with an annual budget for its core programs of approximately AU$25 million. It is important to note that, in addition, the SPC OFP also has a key role in the co-administration, technical oversight and assistance in several major regional projects and processes where it does not receive funding directly (that is, the operational budget is not controlled by SPC administration). The total of this funding can, in some years, exceed the annual budget of the SPC's OFP. One such project is the recently approved (February 2025) Green Climate Fund Project 'Adapting Tuna-Dependent Pacific Island Communities and Economies to Climate Change', which has a total budget of US$107.4 million over seven years. The SPC will receive US$102.3 million of this funding. There is little doubt the SPC will continue to dominate research on the sustainability of Pacific tuna species and the environmental factors, such as El Niño and La Niña, that influence them for at least the next decade.

The Skipjack Programme not only laid the foundation for the sustainable development of the world's largest tuna fishery but also provided confidence that skipjack will remain a critical contributor to the food security and livelihoods of many Pacific Island people, and the development of numerous Pacific Island economies.

The significance of these contributions is demonstrated by the extraordinary socioeconomic benefits now derived from tuna, the most important renewable natural resource in the Pacific Island region. These benefits have been quantified in multiple peer-reviewed journal articles during the past decade and documented by the FFA in its report series on Economic and Development Indicators and Statistics.

Although more than 1,000 species of fish are consumed across the region, tuna – approximately 80 per cent of which will be skipjack – will need to supply 25 per cent of the fish required for good nutrition of all Pacific Island populations combined by 2035.

The contribution of industrial tuna fishing and processing operations to Pacific Islanders' industrial way of life is equally commanding. They now employ ~25,000 Pacific Island people. Ten Pacific Island countries and

territories have been assessed to have tuna-dependent economies. This is because these states derive an average of 37 per cent of all their (nongrant) government revenue from access fees paid by distant-water fishing nations to catch tuna within their Exclusive Economic Zones. To add perspective: Australia's hugely important mining industry represents 10 per cent of the Australian economy. The research described in this book underpins the confidence placed in the sustainability of the region's incredibly important tuna resources, particularly skipjack.

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