SEVENTH STANDING COMMITTEE ON TUNA AND BILLFISH

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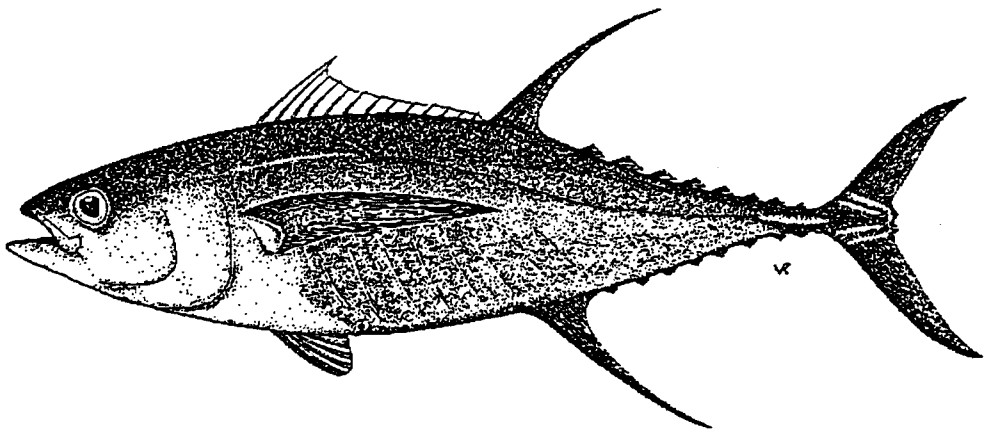
WORKING PAPER 6

AN OFP OPERATIONAL PLAN FOR 1994-98, THE STATUS OF THE SOUTH PACIFIC REGIONAL TUNA RESOURCE ASSESSMENT AND MONITORING PROJECT (SPR TRAMP), AND CONSIDERATION OF THE FUTURE OF THE OFP



Oceanic Fisheries Programme (OFP)
South Pacific Commission
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1. INTRODUCTION

SCTB 6 was presented, at its request, with an operational plan outline (Working Paper 6) for the period 1994-98, based on the SCTB-developed Strategic Plan (originally for 1992-96), and incorporating major elements of the proposed South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPR TRAMP). SCTB 6 considered this outline in conjunction with the more detailed Work Plan for the 1993-94 year (WP 5), and recommended as follows:

"Depending on the success of the application to Lome IV for funding, that the Secretariat incorporate SCTB 6 comments in an operational plan that integrates these new activities with existing activities, and circulate the revised draft to members for comment, if possible by the end of 1993"

It is important to recall that the ongoing central, or "core" activities of the Oceanic Fisheries Programme (OFP) provide scientific direction and adminstration, maintain statistical monitoring functions, and carry out limited research activity, but because of funding limitations must depend on separate funding from other sources to undertake any activity which may extend beyond these basic core functions. In recent years, the EC-funded Regional Tuna Tagging Project (RTTP) and the EC/ICOD-funded Albacore Research Project (ARP) provide examples of the OFP's reliance on such activity to generate much-needed data from field-oriented research. Similarly, the forthcoming South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPR TRAMP) will allow the OFP to implement for the first time, continuous and comprehensive scientific monitoring of the region's tuna fisheries, as well as carrying out additional biological research and assessment/ modelling. These are tasks within the Strategic Plan requirements which clearly would not have been possible within the framework of ongoing OFP activities. The operational plan is therefore closely linked to implementation of these external projects, specifically in this case the forthcoming SPR TRAMP.

It is also necessary to note that continued funding for OFP core activities, provided entirely from extra-budgetary SPC sources for the past 13 years, can no longer be assumed in even the short to medium term. Indeed, in recent years, the OFP has needed to locate new sources of funding just to maintain activities at current levels as contributions from traditional donors remain static or even decline. Both the 25th RTMF and SCTB6 have been specifically alerted to this. Such uncertainty must also impact on the preparation of any medium term operational plan (5 years, in this case) if it is to be at all realistic.

It may also be necessary that priorities be established within the range of programme activities, as recognized by the 25th Regional Technical Meeting on Fisheries (RTMF 25) (see later). Fortunately, OFP activities in toto (ie core plus any additional activity, notably SPR TRAMP) have been structured in the four activity streams drawn from the Strategic Plan. This at least allows implementation according to the availability of resources.

It is possible also that with future institutional arrangements in the marine sector for the region now under consideration, the future of the OFP and its activities may be additionally impacted. In short, the situation has changed a great deal since the original Strategic Plan to guide OFP activities was prepared in 1991, underlining the need to retain flexibility in any plan, as recognized by SCTB6.

The intent of this working paper, with appropriate background provided, is therefore to -

(i) as a necessary prelude to considering an operational plan,

* advise SCTB7 on progress with the implementation of SPR TRAMP

* inform SCTB7 of the present and immediate future funding situation of the OFP

* outline possible longer term options for funding OFP core activities

(ii) present an OFP operational plan in outline for the period 1994-1998 inclusive, assuming varying levels of funding support for the OFP. (A more detailed Work Plan for 1994/95 is presented in SCTB7/WP5).

(iii) confirm priorities for activities to be undertaken, given the near-certainty that complete funding will not be available.

2. HISTORICAL BACKGROUND

The South Pacific Commission's (SPC) Tuna and Billfish Assessment Programme (TBAP), known since March 1994 as the Oceanic Fisheries Programme, was first implemented in October 1981 as the successor to the Skipjack Survey and Assessment Programme (SSAP). The TBAP had an initial mandate to run for three years, with a priority task of establishing a Regional Tuna Fisheries Database. As tuna catches, fishing fleet diversity and fleet size in the SPC area increased, the TBAP was required to undertake a more diverse range of research tasks, and the programme was extended firstly for two years and subsequently for a further five years. This second five-year period was completed on 30 September 1991. During this period, the Programme had been funded entirely by extra-budgetary contributions, from Australia, France, New Zealand and the United States.

SPC member countries, strongly supportive of the TBAP, expressed their desire for the programme to continue, particularly at a time when the western Pacific tuna fishery continued to expand. As an initial step in this process, the 1990 Third Standing Committee on Tuna and Billfish (SCTB) recommended that "... a strategic plan for the next five-year period (1992-96) be prepared to guide the future direction of this programme, and proposed that the Standing Committee on Tuna and Billfish be authorized to develop a draft document for consideration at the 1991 Regional Technical Meeting on Fisheries..". It was also anticipated that development of such a plan may assist efforts to secure longer term funding for the programme.

This recommendation was accepted by the 22nd Regional Technical Meeting on Fisheries (RTMF - 1990) and a draft strategic plan developed by a SCTB sub-committee comprising SPC Chief Fisheries Scientist Dr Antony D. Lewis, Mr Peter Sitan (FSM), Dr Talbot Murray (NZ) and Mr Andrew Richards (PNG), with assistance from an EC-funded consultant, Dr Tim Adams, who was preparing SPR TRAMP documentation.

SCTB4, in Port-Vila June 1991, was presented with this draft plan, much of which was concerned with proposed operational detail for the period 1992-96. The Plan outlined a series of objectives and strategies in four activity areas - Statistics and Monitoring, Biological Research, Stock Assessment and Modelling, and Reporting and Liaison, consistent with the overall TBAP Mission Statement. SCTB4, in the short time available, chose to focus on clarification of mission statement, objectives and strategies, prepared by a drafting group.

This abbreviated Strategic Plan was then presented to the 23rd RTMF (1991), where it was adopted, and passed to 15th CRGA/31st Conference for approval. Following objections by one country, consideration of the Strategic Plan was deferred at that time.

SCTB4, and in turn the 23rd RTMF, recommended "that a detailed operational plan for 1992-1996 be developed by the TBAP and distributed in advance of the Fifth Standing Committee on Tuna and Billfish for evaluation by that meeting". With the Strategic Plan deferred by 31st Conference, this requirement was also deferred.

SCTB5 noted this, and the abbreviated Strategic Plan (attached as Annex I) was resubmitted to the 24th RTMF (1992), readopted by that body, and resubmitted to 32nd Conference (Suva, October 1992) where it was approved. SCTB5 was also advised of the uncertainty of funding for OFP activity for 1992-93, and recognizing that statistics/ monitoring and preparation of National Fisheries Assessments were priority activities, recommended that efforts be made to secure funding commitments on a longer term basis for the Statistics and Monitoring activity as a priority. The 24th RTMF, in commending the work of the Programme, also recommended that funding commitments be sought from donors on a multiple-year basis.

SCTB6, as noted earlier, was then presented with an outline operational plan which attempted to integrate the ongoing TBAP core activities with those planned under the SPR TRAMP project. Useful general comments were received, but the review process was not taken very far because of continuing uncertainty at that time concerning approval and implementation of SPR TRAMP. SCTB6 was again advised of funding difficulties, and the limited success in attracting funding on a longer-term basis, and specifically requested that information on finances be provided in association with operational plans presented to it. The 25th RTMF, meeting earlier this year, recommended that "urgent action be taken to locate and secure additional sources of funding to sustain the base programme." The 25th RTMF also stressed that "highest priority must be given to ensuring continuity" of the statistical and monitoring function, "fundamental to the long term interests of fisheries research and management in the region".

3. THE SOUTH PACIFIC REGIONAL TUNA RESOURCE ASSESSMENT AND MONITORING PROJECT (SPR TRAMP)

During 1990-91, concurrent with the development of the original draft Strategic Plan, a proposal for Lome IV funding, originally entitled the South Pacific Regional Tuna Research Project (SPRTRP), was developed for consideration. This sought funds for a five-year Phase 2 tuna resource assessment, with increased involvement in port sampling, catch monitoring, scientific observer work, biological research and training.

Incorporating much of the activity proposed in the draft Strategic Plan, and costed at 5.5 M ECU over a five year period, this proposal was initially submitted for consideration to the Forum Secretariat in early 1991. The SPRTRP, in outline, had previously been strongly supported for Lome IV funding submission by the 22nd RTMF (1990) and 30th Conference (1990). Following lengthy delays, the proposal was approved as a high priority project with the Natural Resources Section of the Pacific Regional Indicative Programme (PRIP) by the ACP/EC Ministerial Meeting in June 1992.

Several adjustments were made to the SPRTRP. With some linkage between the Lome III-funded RTTP, and the SPRTRP, favourable review of that Project was required before the SPRTRP could be considered for financing. Following favourable review of the RTTP in March 1993, a draft Financing Proposal under the 7th EDF was prepared and approved. In deference to EC priorities, the project was retitled the South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPR TRAMP). Additionally, the budget available for the project within the overall PRIP was reduced to 5.0 M ECU, from the original 5.5 M ECU. This necessitated scaling down some operational costs and to some extent, project objectives. Plans to construct a small wet laboratory, which had attracted considerable discussion at SCTB6, were shelved. The revised Financing Agreement for the project, incorporating these changes, was signed on March 14th 1994, with SPC designated as Regional Authorizing Officer (RAO) for the project.

However, uncertainties still remain as to when funding will be available and when personnel will be recruited. Under EC policy, no financial commitments can be incurred until funding is actually in hand. As at June 30th 1994, no funds had been received; positions had been advertised within the region and Europe, as required, with a closing date of July 31st. Realistically, most of the 8 posts under recruitment (Port Sampling and Observer Supervisor, Scientific Observers (4), Senior Scientists (2) and Research Officer) will not be filled before the end of October, particularly as many procedural matters remain unresolved for the implementation of PRIP Lome IV projects.

Notwithstanding these delays, some progress has been made, particularly with port sampling of catches (see WP5, and INF3). Port sampling coverage has been extended, particularly to cover the increased small vessel domestically-based longline activity and to take advantage of the increased opportunities available since high seas transhipment has effectively been halted; moreover, sampling methods have been standardized, and operational procedures streamlined, greatly assisted by a port sampling workshop held in January 1994 in Chuuk (see INF 3). Considerable dialogue on observer programmes has also occurred, with several observer programmes already in operation at the national level eg FSM and more recently Solomon Islands. Support has been supplied to these programmes, and regular consultation entered with FFA regarding cooperation with compliance observer programmes, as urged by SCTB6 (Recommendation 2).

That such activity has been able to continue, and minimize disruption to long term plans, has primarily been made possible by EC funding provided to extend RTTP activities until SPR TRAMP funds become available (the RTTP Technical Assistance Extension).

4. CURRENT FINANCIAL STATUS OF THE OFP

Until its 10th year of operation, beginning in October 1990, the OFP (TBAP) had been funded in its entirety from extra-budgetary contributions by four "traditional" donors - Australia, France, USA and New Zealand. Programme staffing has fluctuated around nine professional and four support staff, with several additional professional posts generally remaining unfilled (see Table 1). The total budget for the programme, at this level, has been approximately 700,000 CFP units, or US$650,000 per year.

Table 1: OCEANIC FISHERIES PROGRAMME (OFP) ESTABLISHMENT DETAILS

POSITION	CONTRACT EXPIRY
Administration	
Oceanic Fisheries Coordinator (OFC)	11/10/94
Computer Systems Supervisor (CSS)	30/09/95
Project Assistant/OFP (P/OFP)	30/06/95
Documents/Project Assistant (DPA)	13/11/95
Fisheries Statistics Section	
Fisheries Statistician (FSTAT)	02/09/96
Fisheries Database Supervisor (FDS)	03/10/96
Research Officer/Analyst (RO/ANL)	06/09/94
Data Entry Technician (DET)	13/11/95
Data Entry Technician (DET)	26/08/96
Tuna and Billfish Research Section	
Principal Fisheries Scientist (PFS)	11/10/96
Senior Fisheries Scientist (visiting) (SFS)	vacant
Senior Fisheries Scientist (Modeller)	vacant
Fisheries Research Scientist (FRS)	28/09/95
Programmer Research Officer (PROG/RO)	27/08/96
Fisheries Experimental Officer (FEO)	Not extended
South Pacific Regional Tuna Resources Assessment and Monitoring Project (SPR TRAMP)	
Senior Fisheries Scientist (2)	Not yet recruited
Research Officer (Data)	Not yet recruited
Biological Technician (field) (2)	Not yet recruited
Port Sampling and Observer Supervisor	Not yet recruited
Scientific Observer (4)	Not yet recruited
(Port Sampler (5) - unestablished)	

The contributions from traditional sources began to decline at this time, beginning with a reduction in the US contribution, as a result of a change in policy direction rather than any dissatisfaction with the Programme. In succeeding years, as donor contributions continued to trend downwards, certainly in real terms, it became necessary for the Programme to tap new sources of funding to maintain services from the base programme at existing levels. At the same time, large externally funded (ie from non-traditional sources) projects - the RTTP and ARP - commenced in parallel. These fixed term projects relied on the OFP for administration and scientific direction, and in turn were able to financially contribute directly and indirectly to the OFP for this support. Other support was provided from contract research (for FAO) and technical consultancy work, consistent with the aims and direction of the OFP, was undertaken with external financial support (Philippines Tuna Research Project).

Table 2: **OFP (TBAP) Donor Contributions Summary - Year 7 to the present (Year 13)**

Calendar Year	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95
OFP Year [1]	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year [expected]
TRADITIONAL DONORS								
Australia	213,750	162,750	175,500	168,667	185,000	170,013	189,800	[185,000]
France	225,000	227,428	225,455	243,638	229,372	140,909	220,000	[160,000]
New Zealand	75,000	71,000	66,000	48,642	38,056	21,360	55,000	[55,000]
USAID	204,000	243,000	[1]194,287	126,391	56,753	122,709	105,000	0
SUB-TOTAL	**718,550**	**697,178**	**661,242**	**587,338**	**509,181**	**454,991**	**569,800**	**[400,000]**
EXTERNAL SOURCES[2]								
TOTAL	-	-	-	**75,585**	**194,928**	**235,806**	**268,088**	**[130,000]**
GRAND TOTAL	**718,550**	**697,178**	**661,242**	**738,508**	**704,109**	**690,797**	**837,888**	**[530,000]**
								[900,000 Required to maintain present staff levels]

Note [1]: The OFP year, for historical reasons, begins on October 1st.

Note [2]: The above figures exclude RTTP, ARP and expected SPR TRAMP funding, and funded positions.

As summarized in Table 2, external sources were contributing over 30% of the total annual OFP budget by Year 13, as compared to zero at the end of 1989. The slight increase in the Year 13 budget reflects the attainment of nearly full staffing levels (less two senior scientists) for the first time since the mid-1980s. The figures also mask the difficult time experienced by the programme during Years 8,9 and 10, when a deficit incurred as a result of negative currency movements in 1987 was carried over each year, at progressively reduced levels, before being cleared during Year 11.

Although the budget for the current year (Year 13) is likely to be balanced, the outlook for Year 14 is considerably less optimistic. Funding from US sources, which had been maintained to some degree despite the change in policy, will cease as of the end of Year 13, with the withdrawal of USAID from the region. External consultancy work in the Philippines will essentially conclude, although with some prospect of a small carry-over; contract research work will also conclude. EC funding support, provided to enable RTTP analyses and follow-up to continue, will also officially terminate during Year 13. The nett result worst-case scenario of the above will be an expected shortfall in revenue relative to Year 13 of approx. 350,000 CFP units, with no new or alternative sources of funding positively identified. Whilst several other sources of funding are being explored with some prospect of success, it is unlikely that any of these would come on stream during Year 14.

With donor contributions increasingly linked to particular staff positions or activities, to provide greater accountability and transparency of reporting, it is helpful to relate staff in posts at the beginning of Year 14 to likely funding sources (Table 3). With two and four positions linked to Australian and French funding respectively, the remaining six positions will need to be filled from uncommitted sources, and sources yet to be identified. Three of these are professional posts, including that of the Oceanic Fisheries Coordinator. All positions associated with the statistics and monitoring functions are nominally covered by committed funds for Year 14, with the exception of the Computer Systems Supervisor.

Table 3. Funding source by position

Positions	Current Contract Expiry	1994 Source	1995 Source
OFC	11/10/94	RTTP/TA/OFP	? (RTTP TA??)
CSS	30/09/95	OFP General	NZ/AIDAB
P/OFP	30/06/95	"	? (PTRP Cont.?)
FSTAT	02/09/96	FRANCE	FRANCE
FDS	03/30/96	USAID	FRANCE
DET[1]	13/11/95	FRANCE	FRANCE
DET[2]	26/08/96	FRANCE	FRANCE
RO/ANL	06/09/94	RTTP TA	? (EC Sources?)
PFS	11/10/96	AIDAB	AIDAB
FRS	28/09/95	RTTP TA	? (RTTP TA??)
PROG/RO	27/08/96	AIDAB	AIDAB
DPA	13/11/95	OFP General	? (PTRP Cont.?)

5. FUTURE OPTIONS FOR OFP FUNDING

Regardless of whether or not it proves possible to secure the necessary funding for the OFP during Year 14 to maintain the delivery of services at present levels, it is clear that increasing funding uncertainty attends each year's activities. Notwithstanding the welcome commitment in principle by Australia (AIDAB) to provide four years of funding support for the OFP, little progress has been made with securing long term funding security for the OFP, as directed by both RTMF and SCTB. Assuming that the work of the OFP is deserving of long term continuation, several classes of options need to be considered in this regard.

(1) Increase the level of funding from existing donors, and obtain longer term commitments.

This option seems unlikely to be successful, as it would be contrary to the trend of recent years, but could be pursued. AIDAB (Australia) alone of the traditional donors has made a longer term (four year) commitment in principle to funding OFP activity, specifically the Assessment and Modelling component. This comprises salary, allowances and support costs for two positions - the Principal Fisheries Scientist and the Programmer/Research Officer. France continues to support the OFP to the full extent of available funding within existing priorities, although this will be at a lower level than was the case for most of the 1980s. There are also procedural constraints for France to committing funds more than one year in advance. USAID assistance is certain not to resume in the short to medium term, and must realistically be regarded as terminated. Indications are that NZ assistance cannot be significantly increased, and maintenance of support at existing levels cannot be assumed.

(2) Locate and tap new sources of funding

Several new sources of funding are being explored, given the compatibility of their raison d'etre with OFP aims and objectives. The more promising of these include the second phase of Canadian South Pacific Ocean Development Program (CSPODP II) and the UN Global Environmental Facility (GEF). Neither of these potential new sources of funding support is likely to come on stream during Year 14. In any case, these will still only be fixed-term, rather than long term.

Possibilities will probably exist to undertake contract analyses or technical consultancy work. In most if not all cases, this would involve the burden of additional work without adding to the staff complement, or funding existing staff. Such an option is not considered helpful in a situation where funding for existing positions is a priority.

(3) Examine and adopt user-pays options

Two user-pays approaches could be considered, addressing, respectively, the users of information generated by the OFP (primarily the member countries) and the users of the resource (ie. the fishing nations, primarily DWFNs).

(a) Information users

Direct member country support to the OFP already occurs in the welcome case of one country (PNG), which beginning in 1993 has made a modest annual contribution to the budget (US$10,000) in appreciation of OFP services. Whilst in theory, it would be possible to seek such support from all significant users of OFP product, notably PNA countries, this, realistically is unlikely to occur across the board. It could however be pursued, either as flat rate or according to a scale of contributions.

More acceptable may be payment for product received. The Quarterly Bulletin, for example now attracts an annual subscription from private sector subscribers. A more obvious example might be payment for country reports (National Fishery Assessments) at an agreed level; this could be explored.

Another option may relate to collective funding support for a particular position. The OFC position, for example, is not tied to any funding source, is now unlikely to attract SPC core funding despite earlier plans to do so, and yet is clearly integral to the functioning of OFP and delivery of its services. In one sense, SPC core funding, based on member countries assessed contributions, could be regarded as the ultimate form of "information user-pays" support.

At best, this option - payment by users of information - can be expected to provide only partial or short term support, being constrained ultimately by member countries' ability to pay.

(b) Resource users

With the nominal landed value of the annual tuna catch in the SPC area now in excess of US$ 1.3 billion, the application of a "resource user-pays" approach to long term funding for tuna research and monitoring has obvious attractions; the OFP annual programme budget of US$ 1 million at full establishment represents less than 0.1% of the catch value, as opposed to the 2-3% allocation typically seen for applied fisheries research often seen in developed countries. The OFP budget also invites comparison with other similar organizations and programmes. The Inter-American Tropical Tuna Commission, based in La Jolla, California, and servicing the Eastern Pacific Ocean tuna fishery, with an annual catch of 350,000 st (315,000t), or approx one quarter of the WTP catch, attracted total revenues during 1992 of US$4.5 million, to cover total expenditure of US$4.0 million. The newly established Indian Ocean Tuna Commission (IOTC) projects an annual working budget for 1995 of US$.....million, to serve a fishery of approx 300,000t in size. Whilst these two cases are not directly comparable with the OFP/WTP situation, they do underline the modest scale of the OFP operation relative to organizations providing more extensive services to much smaller fisheries, on a user pays basis, and provide a useful point of reference.

Attached are two tables outlining such a "user pays" approach based on the catch by, or the value of the catch to, each fishing nation in the WTP, and providing some idea of how such an approach might operate.

The first table (Table 4) provides indicative estimates of the catch (MT) based on 1992 catches and average landed values (US$) of the catch, by fleet, in the SPC area. Also shown in Table 4 is the unit value of the catch (US$ per tonne) used for this example, the percentages of the catch and value of each fleet relative to the total catch and value for the SPC area, and payments for a tuna research programme based on the percentage catch and value, assuming a total cost of the programme of US$ 1 million per annum. Estimates of landed values are based largely on those recently provided by FFA.

From Table 4 we see that four countries (Japan, Korea, Taiwan and the United States) account for 89 per cent of the total catch and 93 per cent of the total value of tuna fisheries in the SPC area. The other 13 countries and territories each account for no more than 3.2 per cent of the catch and 1.7 per cent of the total value. Ten countries each account for less than 1 per cent of the catch and the value. The payments based on the percentage of catch or value are therefore highly skewed towards Japan, Korea, Taiwan and the United States. Japan alone would pay 44 percent of the total cost of the programme if payments were based strictly on percentage of value.

Rather than a direct pro rata system to calculate user contributions, a more flexible category system,whereby contributors are categorized according to agreed criteria, is often employed eg IOTC, or indeed SPC core budget assessed member contributions. Two examples of the category system are outlined below, involving two and four categories respectively.

Table 5 presents several payment schedules based on a simple **two-category** system. The first category contains the 13 countries which each account for no more than 1.7 per cent of the total value of the catch, while the second category contains the four remaining countries. The payment by the Category 2 participants are determined as a multiple of the payment of the Category 1 participants. Each payment schedule assumes a different multiple in determining the Category 2 payment.

From Table 5, we note that payments by SPC members, the Category 1 participants, would range from $18,868 (under a Category 2 multiple of 10.00) to $47,619 (multiple of 2.00). The payments by the Category 2 participants range from $95,238 (multiple 2.00) to $188,679 (multiple of 10.00).

These estimates are only ball-park figures. Nevertheless, they show that the payment levels are reasonable, or at least not overly extravagant. They could even be considered as relatively small, particularly given the value of the resource to most countries. Obviously, the large number of participants (17) and the relatively modest total cost assumed for the tuna research programme (US$ 1 million) contribute to this result. Yet, Table 5 shows that the "category" approach could be developed into a reasonable proposal.

Table 4. Annual catches and value by fleet

FISHING NATION	GEAR	YEAR	MT	US$	UNIT	MT %	US$ %	PAY · MT	PAY · US$
AUSTRALIA	LL	1992	1,062	5,945,076	5,598 est				
	PL	1992	801	619,173	773 est				
	PS	1992	6,208	4,128,320	665 est				
	TR	1992	100	200,000	2000 est				
	TOTAL		8,171	10,892,569		0.78	0.83	7,823	8,348
FSM	LL	1992	30	167,929	5,598				
	PS	1993	16,779	3,423,564	773 est				
	TOTAL		16,809	3,591,493		1.61	0.28	16,094	2,752
FIJI	LL	1992	886	4,651,806	5,250				
	PL	1991	4,427	3,423,564	773				
	TOTAL		5,313	8,075,370		0.51	0.62	5,087	6,189
FR POLYNESIA	LL	1992	128	264,710	2,068				
	PL	1991	760	593,316	781				
	TOTAL		888	858,026		0.09	0.07	850	658
JAPAN	LL.1	1992	49,600	262,015,079	5,283				
	LL.2	1992	8,350	49,239,286	5,897				
	PL	1992	39,711	86,785,341	2,185				
	PS	1992	184,105	173,979,225	945				
	TOTAL		281,766	572,018,931		26.98	43.84	269,780	438,373
KIRIBATI	PL	1990	578	476,262	824				
	PS	1994	3,000	2,835,000	945 est				
	TOTAL		3,578	3,311,262		0.34	0.25	3,426	2,538
KOREA	LL	1992	23,600	122,590,476	5,195				
	PS	1992	184,105	173,979,225	945				
	TOTAL		207,705	296,569,701		19.89	22.73	198,869	227,280
MARSHALL ISLANDS	LL	1992	14	78,372	5,598 est				
	TOTAL		14	78,372		0.00	0.01	13	60
NEW CALEDONIA	LL	1992	930	4,895,000	5,263				
	TOTAL		930	4,895,000		0.09	0.38	890	3,751
NEW ZEALAND	LL	1992	706	3,952,188	5,598 est				
	PS	1991	6,720	4,468,800	665 est				
	TR	1992	3,856	7,712,000	2,000 est				
	TOTAL		11,282	16,132,988		1.08	1.24	10,802	12,364
PHILIPPINES	PS	1992	31,240	20,774,600	665				
	TOTAL		31,240	20,774,600		2.99	1.59	29,911	15,921
PALAU	PL	1992	75	57,975	773 est				
	TOTAL		75	57,975		0.01	0.00	72	44
RUSSIA	PS	1992	2,126	1,413,790	665 est				
	TOTAL		2,126	1,413,790		0.20	0.11	2,036	1,083
SOLOMON IS	PL	1992	22,250	14,248,154	640				
	PS	1992	11,179	7,434,035	665 est				
	TOTAL		33,429	21,682,189		3.20	1.66	32,007	16,616
TAIWAN	LL.1	1992	9,500	21,435,100	2,256				
	LL.2	1992	4,300	33,740,000	7,847				
	PS	1992	220,000	146,300,000	665				
	TOTAL		233,800	201,475,100		22.39	15.44	223,854	154,403
TONGA	LL	1992	255	570,657	2,238				
	TOTAL		255	570,657		0.02	0.04	244	437
UNITED STATES	LL	1992	153	856,494	5,598 est				
	PS	1992	203,880	135,580,200	665 est				
	TR	1992	3,016	6,032,000	2,000 est				
	TOTAL		207,049	142,468,694		19.82	10.92	198,241	109,183
GRAND TOTAL			1,044,430	1,304,866,717		100.00	100.00	1,000,000	1,000,000

Table 5. **Payment schedules based on two categories of participants. The total cost for the tuna research programme is assumed to be US$ 1 million per annum. Payments by Category 2 participants are defined to be a multiple of the payment for Category 1 participants. Percentages of value were taken from Table 4.**

			CATEGORY 2 MULTIPLE					
FISHING NATION	VALUE %	CAT	1.00	2.00	3.00	4.00	5.00	10.00
AUSTRALIA	0.83	1	58,824	47,619	40,000	34,483	30,303	18,868
FSM	0.28	1	58,824	47,619	40,000	34,483	30,303	18,868
FIJI	0.62	1	58,824	47,619	40,000	34,483	30,303	18,868
FR POLYNESIA	0.07	1	58,824	47,619	40,000	34,483	30,303	18,868
JAPAN	43.84	2	58,824	95,238	120,000	137,931	151,515	188,679
KIRIBATI	0.25	1	58,824	47,619	40,000	34,483	30,303	18,868
KOREA	22.73	2	58,824	95,238	120,000	137,931	151,515	188,679
MARSHALL IS	0.01	1	58,824	47,619	40,000	34,483	30,303	18,868
NEW CALEDONIA	0.38	1	58,824	47,619	40,000	34,483	30,303	18,868
NEW ZEALAND	1.24	1	58,824	47,619	40,000	34,483	30,303	18,868
PHILIPPINES	1.59	1	58,824	47,619	40,000	34,483	30,303	18,868
PALAU	0.00	1	58,824	47,619	40,000	34,483	30,303	18,868
RUSSIA	0.11	1	58,824	47,619	40,000	34,483	30,303	18,868
SOLOMON IS	1.66	1	58,824	47,619	40,000	34,483	30,303	18,868
TAIWAN	15.44	2	58,824	95,238	120,000	137,931	151,515	188,679
TONGA	0.04	1	58,824	47,619	40,000	34,483	30,303	18,868
UNITED STATES	10.92	2	58,824	95,238	120,000	137,931	151,515	188,679
TOTAL	100.00		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

Table 6. **Payment schedules based on four categories of participants: small-value (Category 1), medium-value (category 2), large-value (Category 3), and very large-value (Category 4). The total cost for the tuna research programme is assumed to be US$ 1 million per annum. Payments by participants of Category 1, 2 and 4 are defined to be a multiple of the payment by Category 3 participants.**

PAYMENT MULTIPLES	CAT	MULTIPLE	MULTIPLE	MULTIPLE
	1	1.00	0.10	0.10
	2	1.00	0.50	0.50
	3	1.00	1.00	1.00
	4	1.00	2.00	5.00
FISHING NATION	CAT	PAYMENT	PAYMENT	PAYMENT
AMERICAN SAMOA	1	34,483	4,673	2,994
COOK ISLANDS	1	34,483	4,673	2,994
NAURU	1	34,483	4,673	2,994
NIUE	1	34,483	4,673	2,994
NORTHERN MARIANAS	1	34,483	4,673	2,994
TOKELAU	1	34,483	4,673	2,994
TUVALU	1	34,483	4,673	2,994
VANUATU	1	34,483	4,673	2,994
WALLIS AND FUTUNA	1	34,483	4,673	2,994
GUAM	2	34,483	23,364	14,970
FRENCH POLYNESIA	2	34,483	23,364	14,970
KIRIBATI	2	34,483	23,364	14,970
MARSHALL ISLANDS	2	34,483	23,364	14,970
PALAU	2	34,483	23,364	14,970
TONGA	2	34,483	23,364	14,970
WESTERN SAMOA	2	34,483	23,364	14,970
AUSTRALIA	3	34,483	46,729	29,940
FSM	3	34,483	46,729	29,940
FIJI	3	34,483	46,729	29,940
NEW CALEDONIA	3	34,483	46,729	29,940
NEW ZEALAND	3	34,483	46,729	29,940
CHINA	3	34,483	46,729	29,940
PHILIPPINES	3	34,483	46,729	29,940
RUSSIA	3	34,483	46,729	29,940
SOLOMON ISLANDS	3	34,483	46,729	29,940
JAPAN	4	34,483	93,458	149,701
KOREA	4	34,483	93,458	149,701
TAIWAN	4	34,483	93,458	149,701
UNITED STATES	4	34,483	93,458	149,701
TOTAL		1,000,000	1,000,000	1,000,000

The payment schedules in this worked example could easily be modified to account for more than two categories (and to include certain participants not included above due to lack of data). A second possibility is a **four category** system including small-value (American Samoa, Cook Islands, Nauru, Niue, Northern Marianas, Tokelau, Tuvalu, Vanuatu, Wallis and Futuna), medium-value (Guam, French Polynesia, Kiribati, Marshall Islands, Palau, Tonga, Western Samoa), large-value (Australia, Federated States of Micronesia, Fiji, New Caledonia, New Zealand, People's Republic of China, Philippines, Russia, Solomon Islands) and very large-value categories (Japan, Korea, Taiwan, United States). In this example of a four-category system, each category is defined by the value of the catch: small-value is defined as positive but negligible value; medium-value is defined as non-negligible but less than 0.28 (the FSM level); large-value is defined as greater than or equal to 0.28 and less than 1.66 (the Solomon Islands level); and very large-value is defined as greater than 1.66. The cut-off levels defining each category are subjective, but once the cut-offs have been accepted, the system is entirely objective. Under a four-category system, which now includes 29 participants, the payments by most participants would almost certainly be less than the payments given in Table 5 , and are summarized in Table 6.

An alternative approach might be to base the categories on the value of the catch to coastal states, where value is accrued from domestic fisheries and/or from access agreements. (This would be a form of "information user-pays" approach considered earlier). The preceding approach, for example, takes no account of where catch is taken and access payments which have already accrued. An advantage of this **research levy** type of approach would be that payments by DWFNs would be made through coastal states, rather than as direct participants; coastal states would therefore have almost full control over the research programme. One possible disadvantage might be that DWFNs would probably not support (i.e. provide data and scientific expertise to) the research programme to the same degree as if they were full participants. In practice however, DWFNs have contributed to OFP activity where they have been able (Japan in particular). The real question perhaps is why DWFNS would contribute to a programme of which they are not even clients under present arrangements. A further practical difficulty existing at present is the disparity in fee levels payable under the one existing multilateral arrangement, and the various bilateral arrangements in force. This may considerably complicate the research levy type of approach, particularly as another multi-lateral arrangement is also under discussion.

Conclusion: Adoption of any of the user-pays options outlined would obviously require decisions at the political level. This is particularly the case where most major users of the resource remain outside existing regional organizations. Some of the options available are nevertheless drawn to the attention of Standing Committee, in view of the obvious difficulties the OFP is facing under existing arrangements for funding support. SCTB may wish to draw the options to the attention of RTMF, or given the urgency of the present situation, through the current chairman of RTMF to CRGA/Conference.

6. THE FIVE-YEAR OFP OPERATIONAL PLAN

Originally intended for the period 1992-1996 inclusive, following the development by SCTB of the Strategic Plan (see Annex 1), the plan is now realistically likely to cover 1994-1998 inclusive. As noted in previous sections, considerable uncertainty persists with respect to implementation of such a plan, especially with respect to the all important funding support necessary to pursue stated objectives.

- OFP funding beyond the present year remains uncertain at best, putting at risk continuing central activities of the OFP; the Statistics and Monitoring activity, and part of the Assessment and Modelling activity should however be secure, at least in the short term.

- implementation of SPR TRAMP, the source of any new activity during the period under consideration, has been delayed, and may yet encounter further procedural difficulties.

It is therefore proposed that the basis of the five year operational plan described here be the ongoing Statistics and Monitoring function of the OFP, SPR TRAMP activity as proposed, and a level of Tuna Research Section activity (Biological Research, and Assessment and Modelling) as funding permits.

6.1 General Description of Activities

The work of the OFP over the past twelve years might be considered to have formed a "Stage 1" regional tuna research effort, with a regional database established providing basic coverage of tuna fishing activity in the region, combined with essentially ad hoc research, based primarily on tagging experiments, successfully carried out to improve knowledge of basic parameters of tuna stocks supporting major fisheries in the region.

Implementation of the SPR TRAMP will enable the OFP to develop, in principle, to a "Stage 2" research organization which will undertake continuous scientific fisheries monitoring functions, establish a comprehensive baseline of essential information, continue to perform analytical functions, and undertake tactical research projects as needed. This "Stage 2" may be seen as an intermediate step to defining an ultimate "Stage 3" organization, which might perform the full functions of a scientific secretariat in support of either a regional tuna fisheries management regime with membership of all parties or a regional grouping of member coastal states. The present institutional review, in combination with developments flowing from UN activities (UN Convention on the Law of the Sea (UNCLOS) ratification, UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks (SFSHMFS), UN Conference on Environment and Development (UNCED) etc), will no doubt shape these developments, and impact the future of the OFP beyond 1998. This operational plan does not look beyond that time frame.

The following new or expanded activities are proposed, with ongoing OFP activity identified where relevant.

Statistics and Monitoring

- $_2$Continued operation of Regional Tuna Fisheries Databases
- $_2$Establishment and operation of a scientific port sampling programme;
- $_1$Establishment and operation of a scientific observer programme.
- $_2$Dissemination of statistical information in various forms by publication of quarterly Bulletins and Fishery Yearbooks
- $_2$Monitoring stock abundance using indices based on catch/effort data.
- $_2$Verifying logsheet data with available landings data

Biological Research

- $_1$Regular, but small-scale fieldwork sub-projects, possibly including further tuna tagging to elucidate localised stock assessment or interaction questions. Such sub-projects may be carried out in collaboration with other regional or national research programmes;
- $_2$Collection and processing of samples useful to research on age, growth, reproduction and stock structure of tuna and billfish;
- $_1$Establishment of facilities to enable postgraduate students to pursue research projects of relevance to the objectives of the OFP.
- $_1$Collaboration in studies of the effect of large scale oceanographic processes on tuna fisheries
- $_3$Collaboration in studies of billfish stocks.

Assessment and Modelling

- $_3$Continuing analysis of the results and information generated by the RTTP and associated projects, with particular regard to stock assessment and interaction issues;

- $_2$Development and application of stock assessment techniques based on size composition, catch/effort and supporting biological data, much of this to be generated by SPR TRAMP activities

- $_2$Continued preparation of National Fisheries Assessments

- $_1$Collaboration in bioeconomic modelling of western Pacific tuna fisheries

Reporting and Liaison

- $_3$Support for the publication and presentation of project results, both to national and to regional administrations.

- $_2$Provision of scientific advisory services to national, regional and international bodies as required.

Inherent in the above would be continued support for the OFP computer facility, which is central to much of the work of the OFP and SPR TRAMP. This support would entail mainly the upgrading and maintenance of hardware and software, including the OFP Regional Tuna Fisheries Database$_3$.

Note: New activities for the OFP are subscripted as $_1$. Activities that are established as ongoing following previous ad-hoc, or limited-term project support are subscripted as $_2$. Established core activities that are in need of replacement, or additional funding support in order for the project to accomplish its aims within its time frame are subscripted as $_3$.

6.2 Detailed Description of New Activities

These are essentially activities funded under SPR TRAMP, and are described as follows, for the information of SCTB:-

Statistics and Monitoring Project

The new activities planned under this project are scientific port sampling and scientific observer components.

Scientific Port Sampling Component

A corps of dedicated Port Sampling Officers will be recruited under national terms of employment and based in-country (normally by attachment to the government fisheries administration in the country of deployment). The activities of these officers would be overseen by a Port Sampling and Observer Supervisor, recruited by the project to coordinate all aspects of the port sampling and observer components.

Port Sampling Officers will be stationed at strategic transhipment and unloading points in the region, will be Pacific ACP nationals where possible, and will be responsible for documenting landings data, collecting logsheets (where authorised by member countries), checking for and collecting tags resulting from the SPC Regional Tuna Tagging Project and other experiments (if any - as at June 1994, small numbers of long term tag returns and returns of seeded tags were still being received), collecting size-frequency and species composition samples, and collecting samples for biological analysis.

As with all OFP activities, any raw data collected would be held by SPC in strict confidence, and used only for the purpose of scientific analysis. Copies of all data collected in individual countries would be made available to the Fisheries Departments of those countries.

While the first stage of the port sampling programme will be confined to regional ports, samplers may also be placed at major extra-regional landing points where western Pacific tuna are processed or transhipped.

The number of port samplers to be directly employed by the project will be approximately five, but the total number will be dependent on national pay-scales (normally less than regional rates). It is envisaged that office space would be provided by the government of the country where the officer is stationed[1] and, beyond some basic items of equipment, the major expense of the sub-project will be salary and travel costs.

Note: With the importance of this activity, combined with continuing developments in regional fisheries, port sampling activity with SPC and national support has continued to expand and diversify; in particular, programmes to take account of increased purse seine transhipment in the region following general acceptance of a ban on high seas transhipment, and the rapid growth of domestically-based sashimi longliner activity in the Micronesian area. A workshop was held in Chuuk in January 1994 to coordinate this activity, and importantly to standardize reporting procedures.

Scientific Observer Component

The Forum Fisheries Agency maintains an observer programme on US purse seine vessels, using short-term placements of national fisheries staff for the purpose of surveillance, compliance monitoring and limited biological sampling. The purpose of the SPR TRAMP component is to extend observer coverage to other fleets and gear types not monitored by the FFA programme and, more importantly, to enable more detailed biological data to be collected. Four full-time scientific observers will be recruited (from ACP states if possible) and trained for this purpose. It is stressed that these observers would not carry out a surveillance or compliance monitoring function. The OFP would, of course, maintain its involvement in the FFA observer programme through the training of observers and analysis of data, and with national observer programmes.

The Scientific Observers would probably be based in the region, rather than at SPC headquarters, but under SPC conditions of employment. They would however spend the majority of their time aboard selected fishing vessels, would be under the general supervision of the Port Sampling and Observer Supervisor, and would be in a position to assist the development and operation of national observer programmes, as required.

Expense will be incurred in staff costs (salary and seagoing allowance), travel to and from embarkation and disembarkation points, and some sampling equipment. Where fish are tagged, or samples taken, project funding would be available to compensate vessel owners for the loss of those fish.

Scientific Observers may also participate in research cruises (which would not cover more than 3 months of each year) where necessary.

Computer Support

The Regional Tuna Fisheries Database held by the OFP is one of the most fundamental activities of the programme, and will be the repository for all new information that results from the activities proposed under the SPR TRAMP. In addition, the database is used to process the large amounts of data currently being generated by the RTTP and fisheries catch and effort data received from a variety of sources (now over 1300 vessels per year). The database is currently implemented on a HP9000 series minicomputer, which is also the focal point of a computer network that also includes IBM-compatible and Macintosh microcomputers and a SUN sparc-station. All analyses of data resulting from the SPR TRAMP will be undertaken on this computer system.

The further development and maintenance of the database and associated computer hardware is crucial to the success of this project, and the project will thus provide funding for OFP computer support. This will provide for hardware and software maintenance for existing installations, operating consumables, and provision for the purchase of specific items of hardware and software needed by project staff.

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[1]This has already been agreed by at least one potential placement government.

Biological Research Project

The new Biological Research Project will undertake most of the field-based and laboratory-based research of the OFP. The project will be supervised by the Principal Fisheries Scientist. Other staff, specifically two Senior Fisheries Scientists in the first instance, will be recruited from SPR TRAMP funds. One of these will serve as a Population Modeller, and extend existing OFP capacity in this area, whilst the other will be primarily be involved in field-oriented biological research (see below). It is intended that all of the activities of this project be funded through the SPR TRAMP. The project will now consist of two new components: a field component, and a training component, in addition to ongoing biological modelling.

Note: Following a reduction in funds available for SPR TRAMP, and also reservations expressed by SCTB6, a third laboratory component has now been excluded from the Biological Research Project. This has also impacted the redirection of tasks for the second SFS position.

Field component

The objective of the Field Component is to undertake field experiments to investigate specific stock assessment and tuna fishery interaction problems. Such experiments will involve both small-scale problems of national interest, and others on a regional scale. Studies would be designed by senior OFP staff in close consultation and collaboration with national counterparts.

The Field Component would be headed by a Senior Scientist as noted, who would jointly supervise field experiments, assist in the design and planning of experiments and undertake detailed analyses of the data in collaboration with other OFP staff. He will be assisted in the field by two biological technicians, and at headquarters by a research officer (data), who will be recruited from EC/ACP countries.

It is planned that actual field work would commence in year 3 of the project, continuing for years 4 and 5. Therefore the biological technicians would not be recruited until year 3. Similarly, operational funding for the field component is only requested for years 3, 4 and 5. In years 1 and 2, the Biological Research Project would concentrate on working up the biological data collected by the RTTP, defining specific problems to be investigated during years 3-5 (including extensive consultation with national Fisheries Departments) and preliminary planning of the work to be undertaken.

Training Component

Numerous short-term training opportunities in a variety of fisheries-related areas are regularly available to Pacific Islanders. In the areas of fisheries biology and resource assessment, it is not clear that such short-term training has been particularly effective. With the expansion and re-structuring of the OFP that the SPR TRAMP will facilitate, advantage should be taken of the OFP facilities and expertise to offer longer-term training opportunities to ACP Pacific Islanders at preferrably post-graduate level.

It is proposed that funding be made available through the SPR TRAMP to support longer-term (up to two years) attachments of ACP nationals undertaking a postgraduate degree in fisheries assessment or biology. Such students would be affiliated with a recognised university and obtain the agreement of the university to undertake all or part of the research component of their degree while based at the OFP. The intention is that such students would undertake field, laboratory or computer-based work for their degree, drawing on OFP facilities and expertise for support. Ideally, such work would be of relevence to tuna fisheries problems in the student's own country. With the agreement of the university concerned, a suitably qualified OFP staff member would be appoined as the student's co-supervisor. While placed within the Biological Research Component, attached students would have access to the full range of OFP facilities and expertise.

It is proposed that at least two such postgraduate studentships be offered during the course of the SPR TRAMP, one in years 2 and 3 and one in years 4 and 5. As the exact period of attachment will depend on each individual student's degree programme, a third studentship might be available in years 4 or 5.

Assessment and Modelling Project

The objective of the Assessment and Modelling Project is to develop and apply tuna population dynamics models for the analysis of stock condition and fisheries interaction in support of national and regional fisheries management initiatives.

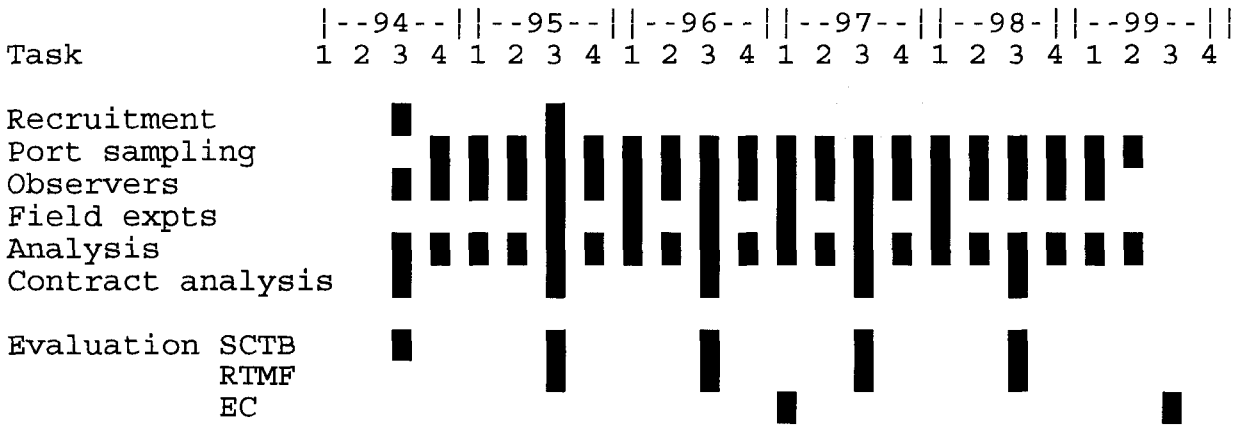
This project will continue to be funded largely from OFP core sources; however funding is sought through the SPR TRAMP for short-term contracts that will be necessary from time to time to undertake detailed and specialised analyses of SPR TRAMP data. This facility will enhance the capability of the OFP to fully address important research questions that arise during the course of the project and assist in the timely dissemination of results.

Reporting and Liaison

Administrative support is required for communication and publication costs associated with the project. These costs will be charged to the project in line with standard SPC practice.

6.3 Implementation Schedule

The original target startup date for the project was 1 May 1994, thus dovetailing with the RTTP and its extension, which is scheduled for completion on 30 June 1994. This timing was intended to maintain the research impetus developed by the RTTP and allow specific reseach to be continued or initiated at a time when the tuna fisheries of the western Pacific are still developing rapidly. The implementation schedule for the specific project components is now revised as follows:



6.4 Annual Benchmark Objectives

The annual objectives listed below for the present year and the following four years comprise most of the medium outputs of the ongoing OFP, and inevitably build on other research already accomplished, or in progress. Their attainment will be subject not only to funding constraints, but changes in the fishery itself, possible institutional rearrangements, possible changes in data acquisition protocols with DWFs, and other unforeseen factors. The operational plan proposed should however be flexible enough to accomodate to adapt to such change, and indeed incorporate such changes as they occur.

1994

* Reassessment of the preliminary stock assessment of western Pacific skipjack and yellowfin, based on RTTP results, by incorporating improved parameter estimates in existing models eg reporting rates.

* Production of a comprehensive stock assessment for South Pacific albacore tuna, based on the length-based SPARCLE model and ancillary data.

* Preliminary assessment of purse seine-longline fishery interaction for yellowfin

* Production of annual stock status report for skipjack, yellowfin, bigeye and albacore

* National Fishery Assessments for 3 countries (Fiji, Palau, Marshall Islands)

* Review of all available data on by-catch and discards in western Pacific tuna fisheries, and recommendations for future work

* Implementation of port sampling programmes, using standardized procedures, at 50% of landing points in the region

* Production of 1993 Yearbook and four quarterly Tuna Bulletins

1995

* Completion of movement models describing skipjack and yellowfin movement in the main WTP fishery area, and incorporation of spatial structure into assessment models.

* Preliminary stock assessment completed for bigeye tuna

* Preliminary assessment of purse seine-longline fishery interaction for bigeye

* Comprehensive assessment of the interaction between albacore surface and albacore longline fisheries

* National Fisheries Assessments for three countries (Vanuatu, Tonga, French Polynesia), and updates of several others

* Estimates of age and growth for yellowfin and bigeye, based on tagging data and otolith reading, completed.

* Scientific observer programme designed and put in place, utilizing four observers in conjunction with national observer programmes

* Port sampling programmes providing representative coverage of all significant landing points in the region; plans developed and approved to begin required sampling outside the region.

* Daily catch/effort coverage of all purse seine fleets in the region

* Yearbook, Bulletins

1996

* Development of age structured models for yellowfin and bigeye, based in part on SPR TRAMP data

* Commencement of strategic biological field research

* National Fisheries Assessments for three countries

* Preparation of initial observer data summaries.

* Completion of joint bioeconomic modelling study.

1997

- NO FURTHER ANNUAL BENCHMARK OBJECTIVES HAVE BEEN ESTABLISHED AT THIS STAGE -