


SOUTH PACIFIC COMMISSION

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TWELFTH REGIONAL TECHNICAL MEETING ON FISHERIES  
(Noumea, New Caledonia, 17 - 21 November 1980)

REPORT

Noumea, New Caledonia  
November 1980

56/81

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**SOUTH PACIFIC COMMISSION**

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## I. OPENING ADDRESS

1. The Secretary-General, the Honourable M. Young Vivian, opened the Meeting and presented the following address:

"Distinguished delegates, observers, ladies and gentlemen, welcome to the South Pacific Commission and to the Commission's Twelfth Regional Technical Meeting on Fisheries. It is most pleasing to see such wide representation from within and also outside the area of the South Pacific Commission gathered for this Meeting, but in view of the great interest in fisheries in this region at this time this is not really surprising.

At the Eleventh Regional Technical Meeting on Fisheries, held here last December, I reviewed the Commission's long-standing involvement in fisheries and the history of our fisheries technical meetings which date back to 1952, a time when none of the countries or territories in the Commission area had their own fisheries services. The fisheries technical meeting was, at that time, the only regional meeting at which fisheries was a major item for discussion. While since 1952 the Commission's role in fisheries has been maintained, or even increased, there are now numerous meetings in the central and western Pacific at which matters relating to fisheries development and policy are discussed. Even within the area of the South Pacific Commission there have been four or five such meetings already this year, including the Forum Fisheries Committee Meetings, the South Pacific Forum Meeting and the recently completed Twentieth South Pacific Conference, at which fisheries was a theme topic. Even though all of these meetings were essential to ensure maximum co-operation amongst interested states in fisheries matters, it is worth noting that this, the Twelfth Regional Technical Meeting on Fisheries, is the first regional meeting in this area this year at which the fish themselves and the dynamics of the fisheries operating on them have been on the agenda for discussion. To me this is most significant for it emphasizes the role which the SPC plays in all technical aspects of fisheries. This is in keeping with the title of this meeting and is also in accordance with the accepted policy of the SPC in matters relating to fisheries, that is that we concentrate on resource survey and assessment.

I would like to again recall events at last year's meeting and remind you that the agenda was dominated by items relating to inshore fisheries and the resources of the reef slopes. Much less coverage will be given to these items this year, for several reasons. Firstly, as they were covered in depth last year, unnecessary repetition is to be avoided; secondly, as the field work for the skipjack programme has been completed it is timely to present the results analysed to date and discuss some of their implications; and thirdly, the Commission does not at this time have at post a Fisheries Adviser. Dr René Grandperrin, who filled this position so admirably for the last four years, has left the Commission to take up a post with ORSTOM in Pointe Noire. He will be succeeded by Mr Barney Smith, who is no stranger to most of you and who is present with us today, even though he will not officially take up his position until early in 1981. I should also point out that our Deep Sea Fisheries Development Project is scheduled to be thoroughly evaluated by the 1981 Planning and Evaluation Committee and we would subsequently expect more in-depth discussion of this topic at the Thirteenth Regional Technical Meeting on Fisheries.

The draft agenda you have before you for this meeting is therefore dominated by items relating to highly migratory species. These can be broadly divided into three categories: firstly, the results from our Skipjack Survey and Assessment Programme; secondly, consideration of the guidelines for the Tuna and Billfish Assessment Programme, approved by the Twentieth South Pacific Conference; and thirdly, consideration of relevant research programmes of other organizations with a view to avoiding unnecessary duplication of effort. The meeting therefore has two basic responsibilities: firstly, of our staff to present to you the results of their work to date. The second responsibility falls on you, the participants, with the assistance of the observers, to provide the guidelines for our future work.

I have personally followed the work of the skipjack programme to date with great interest and I know that the staff of the programme will very competently present to you both the results they have obtained and their interpretation of the significance of these findings to future fisheries management. Looking around me at the high level of participants and observers, I am also confident that this meeting will meet its responsibility to provide us with the guidelines required to formulate a new research programme closely geared to the needs of the countries for which we work. In view of the obvious interest in the topics to be covered by this meeting and the high level of competence present in this room, I am sure that this meeting will not only achieve its objectives, but will also prove to be an interesting and stimulating week for all. I wish you well in your deliberations and I trust that you will enjoy your stay in Noumea."

## II. APPOINTMENT OF CHAIRMAN AND OTHER OFFICE BEARERS

2. Dr Peter Hunt, Chief Fisheries Officer, Fiji, was unanimously elected Chairman of the Meeting and Mr Henry Sesepasara, Director, Office of Marine Resources, American Samoa, was elected Vice-Chairman. A drafting committee comprising Mr David Anderson, Papua New Guinea, Mr Brendan Dalley, Kiribati, Mr Burne Hill, Federated States of Micronesia, and Mr Pierre Rosenberg, New Caledonia, was elected.

3. It was decided that observers would be encouraged to participate fully in the meeting and the press would be permitted to attend.

## III. APPROVAL OF AGENDA AND TIMETABLE

4. The need for an additional agenda item, "The role of appropriate technology in developing small-scale fisheries with a view to the conservation of fuel" was discussed, and the possibility of adding this item as Agenda Item 7.1.4 was noted. However, in fact, this matter was discussed under Agenda Items 4.1 and 9.

5. The provisional agenda was then approved and adopted.

AGENDA

1. Opening address
2. Appointment of Chairman and other office bearers
3. Approval of agenda and timetable
4. SPC Work Programme  
Review of past work and summary of ongoing projects
  - 4.1 Coastal fisheries
  - 4.2 Oceanic fisheries
  - 4.3 Training and information services
5. Relevant regional work programmes of other organisations
6. Results from the South Pacific Commission Skipjack Survey and Assessment Programme
  - 6.1 Skipjack and yellowfin migrations in the study area
  - 6.2 Results from skipjack blood genetics analyses
  - 6.3 Cannibalism by skipjack
  - 6.4 Growth of skipjack
  - 6.5 A comparison of wild and cultured baitfish species with respect to pole-and line fishing requirements
  - 6.6 Size and maturity of tuna
  - 6.7 Further analyses
  - 6.8 Discussion
7. Future regional requirements for fisheries research for highly migratory species
  - 7.1 Monitoring of the levels of exploitation of the stocks of the commercially important species
  - 7.2 Assessment of biological information and factors influencing population dynamics of the dominant tuna species
  - 7.3 Assessment of the status of the stocks of billfishes exploited by longline fisheries with particular emphasis on the significance of billfish being target or non-target species

- 7.4 Continued analyses of skipjack data and updating of assessments in the light of the continued accumulation of tag recapture information
- 7.5 Estimation of degree of interaction between pole-and-line and purse seine fisheries principally for skipjack and yellowfin tuna
- 7.6 Estimation of the interaction between surface and longline gear exploiting yellowfin tuna, bigeye tuna and albacore
- 7.7 Assessment of significance of changes from conventional to deep longline gear
- 7.8 Development of a regional statistical programme
- 7.9 Co-ordinating of observer programme on foreign fishing vessels to ensure adequate biological and catch and effort data accumulation
- 7.10 Assessment of the impact and desirability of the use of rafts as fish attracting devices
- 7.11 Evaluation of sonic devices for aggregating skipjack and other surface schooling tuna
- 7.12 Comparison of the biological data on major species with relevant oceanographic and environmental information, with a view to defining methods of predicting abundance
- 7.13 Studies of the biology and variability in abundance of the most important baitfish species used for catching tunas
- 8. Recommendations for research
- 9. Other matters
- 10. Adoption of report

#### IV. SPC WORK PROGRAMME

6. In the absence of a Fisheries Adviser in post, the Skipjack Programme Co-ordinator introduced this item. Given the strong emphasis on Coastal Fisheries at the last technical meeting, it was anticipated that this meeting would focus on highly migratory species.

7. The meeting expressed its positive desire to record its appreciation of the very significant contribution by Dr René Grandperrin to fisheries development in the region during his four years as SPC Fisheries Adviser.

##### 4.1 COASTAL FISHERIES

8. The activities of the South Pacific Commission in the development of inshore fisheries were briefly reviewed and are summarised in Working Paper 2.

##### Deep Sea Fisheries Development Project

9. The activities and achievements of this project were briefly highlighted. The project has been selected for major review by the Planning and Evaluation Committee in May 1981. A consultant will be selected to review the value of this project to the region.

10. The meeting gave strong support for this project and discussion ensued on the need to look at other types of fishing gears that could be used in conjunction with deep handlining.

##### Recommendation No.1

The meeting recognized the value of the Deep Sea Fisheries Development Project and its considerable impact on artisanal fisheries development in countries of the region and strongly recommended that the South Pacific Commission seek additional funds to enable expansion of the project to include evaluation and demonstration of other fishing techniques which would allow artisanal fishermen to further diversify their activities.

##### Deep Sea Resources Survey

11. Following strong recommendations from both 1978 and 1979 technical meetings, the above project was designed to evaluate the impact of expanding deep handlining fisheries on deep water fisheries stocks. The project has been approved for initiation in 1981 and will be funded from extra-budgetary sources.



12. In view of concern that staffing limitations may hamper the attainment of the project objectives:

Recommendation No.2

The meeting recommended that the South Pacific Commission seek additional funds for the appointment of a suitably qualified scientist to carry out the proposed Deep Sea Resources Survey.

Proposed Joint Workshop

13. The representative of The University of the South Pacific (USP) outlined the USP deep bottom fishing project and suggested that a workshop on this subject be considered.

14. After discussion, the following recommendation was made.

Recommendation No.3

The meeting recommended that the South Pacific Commission liaise with The University of the South Pacific, the University of Hawaii, ORSTOM and other interested agencies with a view to organizing a workshop on deep bottom fish resources. The workshop would aim to bring together fisheries officers from the region and scientists working in this field in order to determine regional research and development priorities for this important fishery.

Workshop on Tropical Rock Lobsters

15. This has been deferred due to the absence of a Fisheries Adviser at the South Pacific Commission.

Bêche-de-mer Project

16. A two-year consultancy on bêche-de-mer biology has been carried out by a consultant, Mr M. Gentle, in collaboration with the Fiji Fisheries Division. A handbook on bêche-de-mer has already been produced and the project report is in preparation. Three weeks were spent in Tonga by the consultant and a bêche-de-mer fishery is in the process of being established.

International Study Visits and Short-Term Consultants

17. Mr M. Rivkin spent two months as a consultant on the economics of baitfish culture and a report is in preparation.
18. The South Pacific Commission sponsored a study visit of a fisheries officer from Kiribati to several island states to study boat building schemes.

### Publications

19. The SPC Fisheries Newsletter continues to be very popular. New printing equipment will facilitate the production of new publications.
20. The Fisheries Directory has been very well received and a second edition is planned for 1981.

### 4.2 OCEANIC FISHERIES

21. This item is discussed under Items 6 and 7.

### 4.3 TRAINING AND INFORMATION SERVICES

22. Several delegates reviewed, based on past experience, the requirements of fisheries training. Particular reference was made to the Nelson Polytechnic Fishing Cadet Course.
23. The New Zealand Consul-General and the Principal of Nelson Polytechnic outlined the background to, and objectives of, the course. Strong support for the continuation of the course was expressed and the following recommendation was made.

#### Recommendation No.4

In view of the strong statements of support and satisfaction from countries who participated in the 1979 and 1980 fishing cadet courses at Nelson Polytechnic and mindful of the practical orientation of the course and the beneficial effects of attending some training courses outside the region, the meeting requested the South Pacific Commission to convey to the Government of New Zealand its strong desire that the course at Nelson Polytechnic be reinstated in 1982.

The meeting recognized the importance of continuing reassessment of course content to ensure its relevance to the needs of the region.

## V. RELEVANT REGIONAL WORK PROGRAMMES OF OTHER ORGANIZATIONS

### FAO/UNDP

24. The representative of the FAO Fisheries Department outlined the planned FAO tuna management programme for the Indian Ocean and Western Pacific. The valuable contribution of the South Pacific Commission to this project was noted with appreciation. The representative also advised that FAO has commenced a programme of assistance for developing countries in the development and management of fisheries in Extended Economic Zones.

25. The UNDP Regional Fisheries Coordinator outlined the planning being undertaken for the 1982-86 four-year budget cycle. Funding is planned for the continuation of the post of Fisheries Coordinator and for the employment of other technical experts, as well as funding for FFA staff, training, and the provision of fish aggregation devices.

26. Following this, the Chief of the FAO Fish Utilisation and Marketing Service outlined the proposed FAO/Norway Cooperative Programme project "Marketing Information and Advisory Services for Fish Products in the Asian Region".

#### Forum Fisheries Agency (FFA)

27. The Interim Director of the Forum Fisheries Agency tabled the FFA Work Programme for 1980-81. He also outlined the objectives of the Forum Fisheries Agency.

#### Office de la recherche scientifique et technique outre-mer (ORSTOM)

28. The representative of ORSTOM outlined the work of this organization in both New Caledonia and Tahiti, which includes studies of reef resources and aerial surveys for tuna in relation to environmental and hydrological conditions.

#### Inter-American Tropical Tuna Commission

29. The Director of the Inter-American Tropical Tuna Commission gave a short history of the functions of his organization and its co-operative relationship with SPC and ORSTOM.

#### The University of the South Pacific (USP)

30. The representative of The University of the South Pacific outlined the work of the Institute of Marine Resources. Mention was also made of the restructuring of the Fisheries Diploma Course.

#### Australia

31. The Australian delegate indicated that a possible expansion of Australian fisheries aid programmes was currently being examined. He also outlined the Australian Fishing Zone Information System.

#### New Zealand

32. The New Zealand delegate presented a working paper on fisheries research in New Zealand and pointed out some areas of relevance to members.

VI. RESULTS FROM THE SOUTH PACIFIC COMMISSION  
SKIPJACK SURVEY AND ASSESSMENT PROGRAMME

33. Dr Robert Kearney introduced the topic and emphasized that the results are from a co-operative effort by the members of the programme. He advised that the various scientists who would be presenting papers were not necessarily the only individuals conducting the relevant research and analysis.

6.1 SKIPJACK AND YELLOWFIN MIGRATION IN THE STUDY AREA

34. From the preliminary analysis of migration behaviour, Dr Pierre Kleiber concluded that it is not possible at this time to postulate any stable barriers to the interchange of skipjack and hence the potential interaction of neighbouring fisheries in the Western Pacific region, however patterns in migration were emerging. It is also clear that skipjack schools do not necessarily maintain their integrity for any length of time. Further detailed investigation of migratory patterns will require consideration of the seasonal and geographic distribution of fishing intensity in the region.

35. An extremely productive discussion and question period then ensued.

6.2 RESULTS FROM SKIPJACK BLOOD GENETICS ANALYSES

36. Mr Sandy Argue presented results arising from two workshops\* on genetic analyses of skipjack blood samples collected by the SPC Skipjack Programme. Experts in the fields of population genetics and fisheries population biology met with Programme scientists to jointly consider the preliminary results from Programme's blood genetics analyses, additional blood genetic data from outside the SPC area, and appropriate statistical analyses.

37. The second meeting of experts noted that structuring was present within the skipjack population of the SPC area, but an understanding of how this structuring would be relevant to management and development of skipjack fisheries in the region was not evident from the data. It was concluded that the continuation of the present skipjack blood sampling programme would not significantly improve understanding of skipjack population structure in the Central and Western Pacific Ocean.

38. The topic was then discussed at length by the meeting.

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\* The results of the first workshop have been published as Skipjack Programme Technical Report No.1.

### 6.3 CANNIBALISM BY SKIPJACK

39. Preliminary results from the joint SPC/ORSTOM work on juvenile tunas found in the stomachs of adult tunas caught by pole-and-line gear were presented by Mr Argue. He also discussed predator/prey relations between smaller skipjack and larger skipjack, and noted preliminary results on distribution and relative abundance of skipjack juveniles.

40. The meeting discussed this matter in detail.

### 6.4 GROWTH OF SKIPJACK

41. Mr Tim Lawson presented preliminary results on skipjack growth. The quality and quantity of data were discussed, as well as the analytical procedures utilized. It seems that growth of young skipjack in the western Pacific is much faster than young skipjack in the eastern Pacific, and that older skipjack reach smaller maximum average sizes in the west, 55-65 cm compared to 80-90 cm in the east. As these results are preliminary, the hypothesis needs to be confirmed.

42. There was much discussion on this topic.

### 6.5 A COMPARISON OF WILD AND CULTURED BAITFISH SPECIES WITH RESPECT TO POLE-AND-LINE FISHING REQUIREMENTS

43. Mr Jean-Pierre Hallier contrasted cultured baitfish (mollies and milkfish) with wild caught baitfish in terms of fishing usefulness, and discussed the programme's baitfish methodology. In programme experiments milkfish and wild bait were more effective than mollies, and the effectiveness of cultured bait was improved when mixed with wild bait. Mollies were least effective, but under special circumstances they can be useful.

44. The work of the meeting in this respect was considerably assisted by Dr Dan Popper, FAO Aquaculturist stationed in Western Samoa. There was discussion on the merits of wild and cultured baitfish species with particular respect to mortality rates, the effectiveness of the various species, and the economics of bait culture.

### 6.6 SIZE AND MATURITY OF TUNA

45. Dr Kearney presented a comprehensive series of graphs depicting the size frequencies and stages of female maturity for skipjack and yellow-fin tuna taken by the programme's survey vessels in the waters of the countries visited.

### 6.7 FURTHER ANALYSES

46. Dr Kearney advised that this item was designed to cover results so far obtained by the programme but not included in the working papers presented to the meeting, and to indicate the direction of future analyses.

47. Estimates of mortality of skipjack and yellowfin tuna would form a major part of the analyses to be undertaken in the next few months. A preliminary analysis of results of the double tagging experiments showed that in the short term, slippage of tags is slight, with no indication that mortality rates are increased by the process of tagging.
48. Much of the remaining biological data will be examined before September 1981.
49. Comparison of the programme's data with oceanographic information will be undertaken in close co-operation with ORSTOM and other agencies. The meeting was referred to Working Paper 16 on skipjack catch relationships between different areas of the Pacific. This paper presents some interesting hypotheses about migration in relation to ocean currents.
50. The question of baitfish assessment with respect to distribution and abundance of important baitfish species is a major part of the work of the programme. The programme's objectives in this area are to complete analyses and assess the significance of these results for each of the countries in the area.
51. Dr Kearney concluded by advising the meeting that the primary objective of the various studies and analyses outlined in Item 6 is to seek a complete, biologically accurate description of the skipjack resource of the SPC region.

#### Discussion

52. The meeting commended the Co-ordinator and team of the Skipjack Survey and Assessment Programme for the outstanding scientific contribution to the understanding of the skipjack tuna and baitfish resources in the SPC region. The significant benefits of the programme's visits to member states in the areas of fisheries training and enhanced regional awareness of fisheries resources were noted by several representatives. The meeting further commended the Programme Co-ordinator, Dr Robert Kearney, for his substantial administrative achievement in making the programme a success.

#### VII. FUTURE REGIONAL REQUIREMENTS FOR FISHERIES RESEARCH FOR HIGHLY MIGRATORY SPECIES

53. In introducing the topic the Chairman suggested that it would be especially useful for the meeting to give guidance to the Tuna Programme by attaching priorities to future requirements as identified by the meeting.
54. It was noted that some countries have specific research needs not common throughout the region. This might mean that low priority would be assigned to projects which are important to some countries. Therefore special requirements could need to be met upon request.

55. It became apparent at an early stage of the ensuing discussion that the highest priority should be given to the development of a regional statistical programme, as this would provide the basis for other activities to be carried out. Because of the importance of this matter, it was considered that this item required a special recommendation under Agenda Item 8 and that the question of priorities should be made the subject of a separate recommendation.

56. All agenda items were discussed in relation to Working Paper 27. Priorities on each proposed research item were presented by member countries and these are summarised in the graph entitled "Tuna Programme Priorities" which is attached as Annex I.

57. It was considered desirable that the Skipjack Survey and Assessment Programme present a summary of the anticipated extent of the involvement of the Tuna Programme in each of these projects to the next annual Regional Technical Meeting on Fisheries.

#### VIII. RECOMMENDATIONS FOR FUTURE RESEARCH

58. Following comprehensive discussion of the research projects under Agenda Item 7 by individual member countries, the following recommendations were made.

##### Recommendation No.5

The meeting recommended that the South Pacific Commission develop a regional fisheries statistics programme to obtain and analyse catch and effort and other scientific data as the base for the approved research programme on highly migratory species.

##### Recommendation No.6

The meeting discussed at length all of the projects listed under Agenda Item 7 on Future Regional Requirements for Fisheries Research on Highly Migratory Species and considered that all of the projects warranted investigation, but the meeting recommended that, in the event of budgetary constraints, the projects should be approached according to the following priority listing: 7.8, 7.5, 7.3, 7.4, 7.1, 7.2, 7.13, 7.12, 7.10, 7.6, 7.9, 7.7 and 7.11.

59. The meeting, following further discussion of technical aspects of country fishery observer programmes, recognized the importance of, and need for, a uniform approach to the collection of scientific information under such programmes, and made the following recommendation.

Recommendation No.7

The meeting recommended that the South Pacific Commission convene an appropriate workshop to consider fishery observer programmes to harmonize the transfer of scientific and technical fisheries knowledge among member states and to help assure the development of an adequate statistical sampling effort throughout the region. The South Pacific Commission should endeavour to solicit from national and international fisheries organizations, relevant input and background documents.

60. The meeting continued its previous discussions on the wide ranges and extensive migratory movements characteristic of tuna and billfish and made the following recommendation.

Recommendation No.8

As the Tuna Programme is to be co-ordinated through the South Pacific Commission, the area in which most research will be carried out will be primarily that designated as the "Area of SPC". However, it is appreciated that tuna and billfish are wide-ranging species whose distributions and migrations are completely independent of national or international boundaries. The meeting recommended that the limits of the study area should be flexible, but governed primarily by the distribution of the tuna and billfish stocks common to the countries of the SPC.

61. Recognising the many benefits which accrued from the close co-operation of the existing Skipjack Programme with other organizations and interested countries, the meeting considered that this approach should continue. The following recommendations were made to this effect.

Recommendation No.9

The meeting recommended that the South Pacific Commission, through its Tuna Programme, should continue its policy of close co-operation with countries and organizations involved in the study of tuna and billfish.

Recommendation No.10

The meeting was informed that the International Programme for Indian and Pacific Ocean Tuna Fisheries had been established by FAO. As the discussion of the results of the SPC Skipjack Survey and Assessment Programme would be beneficial to both organizations, the meeting recommended that suitably qualified experts and representatives from selected countries participating in the FAO Programme be invited to attend the Thirteenth Regional Technical Meeting on Fisheries.



#### IX. OTHER MATTERS

62. The meeting recognized the need for development in the field of appropriate technology relating to fishery activities (for example with a view to minimising the impact of oil prices on the economics of fisheries) and endorsed the continuing liaison between the South Pacific Commission and other interested bodies in this area of work. [Recommendation No.1 which resulted from previous discussion under 4.1 was considered to be relevant to this topic].

63. The need to promote increased involvement of promising national fisheries officers at future technical meetings was discussed and the following recommendation made.

##### Recommendation No.11

Recognizing the need to develop local technical expertise in the fishing industry in the Pacific region, the meeting recommended that SPC countries make every effort to nominate national technical participants to be included in each country's delegation in future SPC technical meetings and workshops.

## X. SUMMARY OF RECOMMENDATIONS

### COASTAL FISHERIES

#### Deep Sea Fisheries Development Project

##### Recommendation No. 1

The meeting recognized the value of the Deep Sea Fisheries Development Project and its considerable impact on artisanal fisheries development in countries of the region and strongly recommended that the South Pacific Commission seek additional funds to enable expansion of the project to include evaluation and demonstration of other fishing techniques which would allow artisanal fishermen to further diversify their activities.

#### Deep Sea Resources Survey

##### Recommendation No. 2

The meeting recommended that the South Pacific Commission seek additional funds for the appointment of a suitably qualified scientist to carry out the proposed Deep Sea Resources Survey.

#### Proposed Joint Workshop

##### Recommendation No. 3

The meeting recommended that the South Pacific Commission liaise with the University of the South Pacific, the University of Hawaii, ORSTOM and other interested agencies with a view to organizing a workshop on deep bottom fish resources. The workshop would aim to bring together fisheries officers from the region and scientists working in this field in order to determine regional research and development priorities for this important fishery.

### TRAINING AND INFORMATION SERVICES

##### Recommendation No. 4

In view of the strong statements of support and satisfaction from countries who participated in the 1979 and 1980 fishing cadet courses at Nelson Polytechnic and mindful of the practical orientation of the course and the beneficial effects of attending some training courses outside the region, the meeting requested the South Pacific Commission to convey to the Government of New Zealand its strong desire that the course at Nelson Polytechnic be reinstated in 1982.

The meeting recognized the importance of continuing reassessment of course content to ensure its relevance to the needs of the region.

## RECOMMENDATIONS FOR FUTURE RESEARCH

### Recommendation No.5

The meeting recommended that the South Pacific Commission develop a regional fisheries statistics programme to obtain and analyse catch and effort and other scientific data as the base for the approved research programme on highly migratory species.

### Recommendation No. 6

The meeting discussed at length all of the projects listed under Agenda Item 7 on Future Regional Requirements for Fisheries Research on Highly Migratory Species and considered that all of the projects warranted investigation, but the meeting recommended that, in the event of budgetary constraints, the projects should be approached according to the following priority listing: 7.8, 7.5, 7.3, 7.4, 7.1, 7.2, 7.13, 7.12, 7.10, 7.6, 7.9, 7.7 and 7.11.

### Recommendation No. 7

The meeting recommended that the South Pacific Commission convene an appropriate workshop to consider fishery observer programmes to harmonize the transfer of scientific and technical fisheries knowledge among member states and to help assure the development of an adequate statistical sampling effort throughout the region. The South Pacific Commission should endeavour to solicit from national and international fisheries organizations, relevant input and background documents.

### Recommendation No. 8

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### Recommendation No. 9

The meeting recommended that the South Pacific Commission, through its Tuna Programme, should continue its policy of close co-operation with countries and organizations involved in the study of tuna and billfish.

Recommendation No. 10

The meeting was informed that the International Programme for Indian and Pacific Ocean Tuna Fisheries had been established by FAO. As the discussion of the results of the SPC Skipjack Survey and Assessment Programme would be beneficial to both organizations, the meeting recommended that suitably qualified experts and representatives from selected countries participating in the FAO Programme be invited to attend the Thirteenth Regional Technical Meeting on Fisheries.

OTHER MATTERS

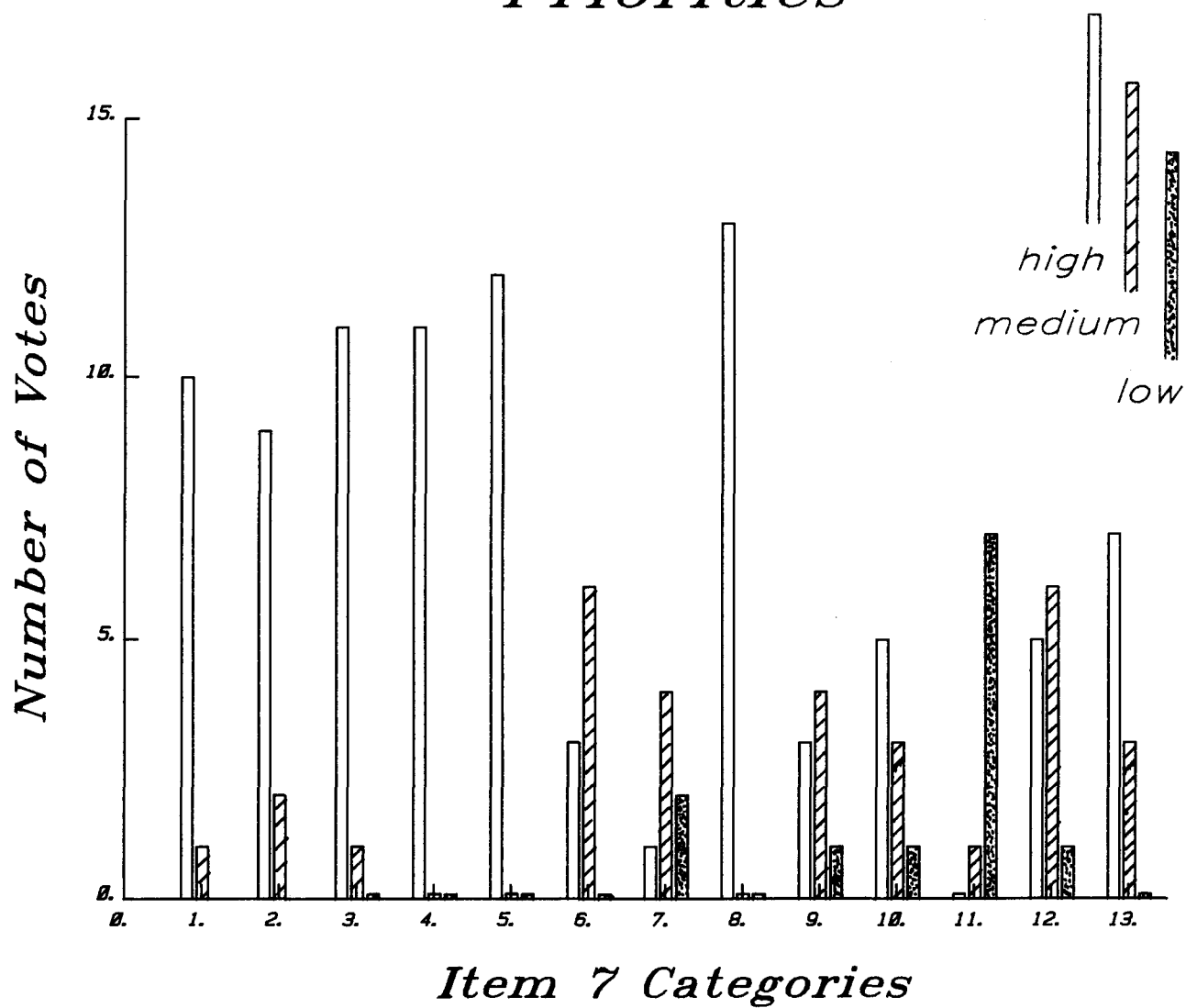
Recommendation No. 11

Recognizing the need to develop local technical expertise in the fishing industry in the Pacific region, the meeting recommended that SPC countries make every effort to nominate national technical participants to be included in each country's delegation in future SPC technical meetings and workshops.

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ANNEX I

## *Tuna Programme Priorities*



ANNEX II

LIST OF WORKING PAPERS PRESENTED AT THE MEETING

- SPC/Fisheries 12/WP.1 - Preliminary observations on juvenile skipjack from the stomachs of adult skipjack caught by pole-and-line gear, by Francois Conand (ORSTOM Noumea) and A.W. Argue (SPC).
- WP.2 - Summary of activities of the South Pacific Commission in the development of fisheries (other than skipjack) from December 1979 to November 1980.
- \* WP.3 - Country Statement - Commonwealth of the Northern Mariana Islands - Status of Fishery in the Northern Mariana Islands.
- WP.4 - Tuna aggregation project - Northern Marianas Fiscal Year 1979, by Division of Marine Resources Department of Natural Resources, Commonwealth of the Northern Mariana Islands.
- WP.5 - Country Statement - Republic of Vanuatu.
- WP.6 - Country Statement - Cook Islands.
- WP.7 - Baitfish in New Caledonia, by T. Boely and F. Conand (ORSTOM Noumea).
- WP.8 - Aerial radiometry and tuna prospection, by Francis Marsac and Michel Petit (ORSTOM Noumea).
- WP.9 - A summary of research activities within Fisheries Research Division, Ministry of Agriculture and Fisheries, New Zealand.
- WP.10 - A folio of length frequency and female maturity stage distributions for tuna caught by the skipjack programme pole-and-line vessel.
- WP.11 - Progress review of genetic analysis of skipjack blood samples by the Skipjack Survey and Assessment Programme.
- WP.12 - Country Statement - Republic of Kiribati.
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