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ELEVENTH REGIONAL TECHNICAL MEETING ON FISHERIES
(Noumea, New Caledonia, 5-10 December 1979)

REPORT

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Noumea, New Caledonia
January 1980

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I. INTRODUCTION

1. The meeting was officially opened by Mr M. Legand, Representative of ORSTOM for the South Pacific. Mr Legand's address was followed by an address by the Secretary-General of the South Pacific Commission.
2. Mr H. Kami, Chief of Aquatic and Wildlife Resources Division, Guam, was unanimously elected Chairman of the meeting, and Mr Brendan Dalley, Chief Fisheries Officer of Kiribati, was elected Vice-Chairman.
3. A drafting committee comprising Mr Gavin James, Fisheries Research Division New Zealand, Mr Brendan Dalley and Dr Patrick Galenon, Service de la pêche, French Polynesia, was elected.
4. The provisional agenda was approved and adopted.

II. AGENDA

1. Opening addresses
2. Appointment of Chairman and other office bearers
3. Approval of agenda and timetable
4. Country Statements and SPC Fisheries Directory
5. South Pacific Commission Work Programme
 - 5.1. Coastal Fisheries
 - 5.1.1. Bêche-de-mer
 - 5.1.2. Deep bottom fishing
 - 5.1.3. Training
 - 5.1.4. Progress in fish poisoning research
 - 5.2. Oceanic Fisheries
 - 5.2.1. Surface tunas
 - 5.2.2. Longline tunas
 - 5.3. Information Services
6. Reports by organisations and research centres
7. Seminar Sessions
 - 7.1. Research on bottom fish
 - 7.2. Aquaculture
 - 7.3. Floating objects
 - 7.4. Teledetection and aerial surveys
8. Other matters
9. Adoption of report
10. Expert Committee on Tropical Skipjack (full day, Monday 10 December)

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Interpreter

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Interpreter

Mr Hubert Toubeau
Interpreter

Mrs Clara Pichon
Secretary to the meeting

IV. COUNTRY STATEMENTS

5. It was agreed by the meeting that country statements would not be read out but questions on them were welcome.

V. FISHERIES DIRECTORY

6. The Fisheries Adviser, Dr R. Grandperrin, described the first edition of the Fisheries Directory and invited comments for future editions and requested any corrections from individual countries.

VI. SOUTH PACIFIC COMMISSION WORK PROGRAMME

Coastal Fisheries

7. The work programme was introduced as outlined in Working Paper 15. It was pointed out that an opportunity would be made for other persons working in the same fields to present their work.

Bêche-de-mer

8. Mr Mark Gentle, SPC bêche-de-mer consultant, described his work in conjunction with Fiji Fisheries Division, and illustrated his talk with slides. Mr Gentle's work covers the biology, population dynamics and potential yields of the commercial species.

9. Mrs Chantal Conand, ORSTOM Noumea, then presented the results of her work in New Caledonia on bêche-de-mer biology and processing, especially Microthele nobilis.

10. A discussion on marketing problems followed.

11. The meeting made the following recommendation:-

Recommendation No.1

The meeting recommended that a detailed survey of marketing opportunities available to South Pacific territories for their production of bêche-de-mer should be carried out by a marketing specialist having proven experience of marine products on South-East Asian markets.

Emphasis should be put on precise information on quality requirements in buyer countries and possibilities of advanced processing enabling South Pacific territories to derive greater profits from this product.

As a follow-up to this survey it is recommended that information be obtained and communicated to South Pacific territories on a continued basis covering current demand, prices, shipping and grading requirements not only for bêche-de-mer but also for other marine products such as shark fins, trochus meat, etc. as required by the territories.

12. The Fisheries Assistant, Mr J. Crossland, described the training programme in bêche-de-mer processing which is carried out in Fiji and Solomon Islands. The value of this training was recognised by those countries which had participated.

Environmental programme

13. The SPC Regional Ecological Adviser, Dr A.L. Dahl, described the environmental programme of SPC including coastal resource surveys, coral reef monitoring and the regional environment programme. A handbook on coral reef monitoring will shortly be available. The regional environment programme exists to provide assistance on request to countries on all aspects of environmental problems, which vary greatly within the region. The programme is scheduled to begin in January 1980.

Deep bottom fishing

14. A review was presented on the progress of the Deep Sea Fisheries Development Project which has visited ten countries since its inception in March 1978. It was noted that catch rates were higher than those achieved by traditional methods.

15. The meeting discussed at length the different methods of bottom fishing including longlining, vertical lining and the mechanisation of these methods. Discussion on the topic of a suitable type of boat for this fishing followed. This included the possibility of combining sail and power for reasons of fuel economy. It was felt that a multi-purpose boat to suit all requirements had yet to be developed.

16. The possibility of overfishing deep bottom resources was pointed out.

Fisheries training

17. The various opportunities were described for training through the SPC regular budget and outside funding arranged by SPC. A description was given of the various interterritorial study grants awarded for fisheries training since the last meeting.

18. An account was presented of the Nelson Polytechnic Fishing Cadet Course which was attended by nine Pacific Islanders in 1979. Because of its success a further course will be offered in 1980.

19. Mr V. Hinds, Fisheries Management Division, New Zealand, described the opportunities available to assist in training and development programmes in the region.

Progress in fish poisoning research

20. Reference was made to the article in Fisheries Newsletter No.19 which summarizes progress in the Commission's project on fish poisoning. Ms Nancy Lewis, University of California, described her field studies in Polynesia on the social effects of ciguatera on the community.

Oceanic Fisheries

Longline tunas

21. A report on the consultancy by Mr W. Klawe on longline tuna catches in the 200-mile zones of Pacific countries was given. Several countries reported that this information had proved useful in their fisheries negotiations with distant-water fishing nations.

Information Services

22. The Fisheries Newsletter and other publications on fisheries were outlined. A request was made to countries and organisations for contributions to the Newsletter.

23. A discussion followed on the need for a film library. The meeting made the following recommendation:-

Recommendation No.2

The meeting recommended that the South Pacific Commission include within Information Services a periodic annotated list of technical fisheries films suitable for pre and post harvest development, extension and training aspects of fisheries development within the region.

Recommendations of the Tenth Fisheries Meeting

24. A review of progress on the recommendations was given by SPC fisheries staff. All recommendations had been fulfilled except No.6. Discussion on this was postponed until the Expert Committee Meeting on Skipjack.

VII. REPORTS BY OTHER ORGANISATIONS AND RESEARCH CENTRES

FAO/UNDP

25. Mr Dan Popper of the FAO described the projects of FAO/UNDP in the region. These included projects in Niue and Fiji which have been completed and ongoing projects in Solomon Islands, Kiribati, Cook Islands, New Hebrides, Western Samoa, Tonga and Fiji. Additional projects are planned in Tuvalu and New Hebrides.

Southwest Fisheries Center

26. Mr Richard Uchida outlined four research programmes carried out by the Center: tuna behaviour and physiology, tuna stock assessment, fish aggregating devices and insular resource surveys.

ORSTOM

27. Mr Dandonneau reviewed the work of the Noumea centre which covered bêche-de-mer, radiometry, trochus, deep bottom fishing and oceanography. A slide show and talk was given by Mr W. Bour on the trochus fishery in New Caledonia.

University of the South Pacific

28. Mr M. King described the work of the Institute of Marine Resources on deep water and shallow water shrimps, and lutjanids. He also outlined the diploma course in tropical fisheries.

Australia

29. Mr A. Caton of the Department of Primary Industry presented a paper on Australia's role in fisheries development in the region and described the projects funded under Australian aid.

New Zealand

30. Mr G. James and Dr G. Habib described the research carried out in New Zealand which could have relevance to fisheries within the region particularly in shellfish aquaculture, squid fishing and the tuna fisheries.

31. A discussion followed on the possibility of squid fishing in tropical waters. It was evident that little information was yet available on these resources.

VIII. SEMINAR SESSIONS

RESEARCH ON DEEP BOTTOM FISHES

32. Mr R. Uchida described the bottom fish research programme in Hawaii and commented on the difficulty of stock assessment and management. A discussion followed on methods of obtaining good catch effort data, especially from artisanal fisheries. Consideration was then given to the problem of accurate species identification of deep water fishes.

33. It was suggested that in Western Samoa and Hawaii some overfishing might already be occurring. Concern was expressed by the meeting that because of the many species involved, and the large amount of research information needed, individual countries would not be able to undertake the studies necessary to ensure that overfishing of deep bottom fishes did not occur. Such information on catch, effort and biology should be collected simultaneously with the development of a previously little exploited fishery.

34. Therefore the meeting recommended that:-

Recommendation No.3

The meeting recommended that SPC consider a comprehensive programme to study the effects of the development of fishing on deep water bottom fish resources. It is suggested that this programme be based in one territory so that sufficient data can be collected to determine possible changes in the resources as a result of increased fishing effort. Such information is to be made available to other member countries. The meeting also recommended that the SPC encourage other countries within the region to collect statistics on their deep bottom fisheries.

AQUACULTURE

Mollusc culture

35. The film "Oyster culture in the tropics" produced by IDRC Canada was shown. A discussion followed on mollusc aquaculture. Professor J. Thomson of the University of Queensland described pioneering work in Australia on oyster culture. Mr Hatt from CNEXO outlined that organisation's work on tropical oysters from New Caledonia and the Philippines green mussel.

36. This organisation's work in Tahiti was illustrated by a slide show and a video tape. Interest was shown by several participants in the culture of the Philippines green mussel and the availability of spat from CNEXO. Three constraints existed: the difficulties of air transport, the small quantities of spat presently available, and lack of qualified staff and adequate facilities in most of the territories concerned.

37. The meeting made the following recommendation:-

Recommendation No.4

The meeting recommended that SPC try to stimulate co-operation between Pacific countries on aquacultural matters. These should include:-

- (1) Arranging training of personnel.
- (2) Distribution of desirable species.
- (3) Supply of fry larvae and spat by existing hatcheries on preliminary or experimental scale and in future on commercial scale and basis.
- (4) Providing for free flow of information and knowledge and co-operation with the organisations involved in tropical island aquaculture like FAO/UNDP, CNEXO, etc.

Bait culture

38. Reports were given on mollie culture projects in American and Western Samoa and on the milkfish project in Kiribati. A short discussion followed on the effectiveness of cultured bait. It was recognised that mollies, while very resilient, were more effective when mixed with wildbait. Milkfish were better cultured bait than mollies.

Other projects

39. Fiji outlined its fresh water project on carp and Papua New Guinea its projects on carp and trout.

FLOATING OBJECTS

40. An introduction was given on the use of floating objects as fish attracting devices. A report on the Southwest Fisheries Center project was given. This project has now been taken over by the Hawaiian Fish and Game for statewide implementation.

41. In the discussion which followed, several problems were defined: possible hazards to shipping, cost, loss of buoys and logistic problems in small countries.

42. A report on the Philippines payao fishery was given by Dr R. Skillman, FAO tuna specialist, and a similar fishery in Malta was described by Mr Hinds. It was reported that Japanese purse-seiners had used sonar transmitters on rafts to monitor the presence of fish.

43. The meeting felt that despite the problems involved, floating objects have potential for increasing catchability and reducing fuel consumption.

TELEDETECTION AND AERIAL SURVEYS

44. Mr M. Petit of ORSTOM Noumea presented a series of slides on aerial radiometry and described its uses in the location of thermal fronts and its correlation with tuna concentrations. These techniques have also been used in New Zealand and Australia with good results. An account of aerial surveys in Papua New Guinea was given and it was pointed out that tuna behaviour in the tropics was quite different from that in temperate regions. In Papua New Guinea there had been a negative correlation between aerial sightings and catches by pole-and-line vessels.

45. A film on purse-seining in New Zealand using aerial spotting was shown.

IX. EXPERT COMMITTEE ON TROPICAL SKIPJACK

46. Dr R.E. Kearney, SPC Skipjack Programme Co-ordinator, reviewed the background document on the Skipjack Survey and Assessment Programme, and noted several aspects of the Programme's financial situation that had not been covered in the document. Firstly, there was the addition of a fourth year to the Programme to handle processing and analysis of data collected during the three years of fieldwork. To date, four donor governments have given commitments for fourth year funding. Secondly, expenditures in the first two years of the Programme were within two per cent of estimated expenditure, in spite of exchange rate fluctuations approaching 40 per cent over these two years. The six donor governments maintained funding levels for the third year and additional third year charter costs were generously paid by Japan. Thirdly, the survey of French Polynesia during the current Programme year will be conducted under a co-operative agreement with the Inter-American Tropical Tuna Commission, which has contributed US\$90,000 to the Programme. Finally, the problem of maintaining present staff when the new salaries offered are significantly lower was noted.

47. By the end of the third year of the Programme, the vessel will have visited all countries and territories in the SPC area. The only problem since the beginning of the Programme occurred in Indonesia, when Indonesian authorities delayed granting vessel clearances, and consequently the Indonesian survey was abandoned. At 8 December 1979, the total number of fish tagged was 92,626, so there is no doubt that the original tagging objective of 100,000 will be passed; recoveries exceed 4 per cent. In conclusion, it was noted that all data collected so far have been computerized, and it was hoped that by the next Expert Committee Meeting the Programme would be able to present more detailed analyses of tag recapture and blood genetics data.

48. The meeting participants then had a productive discussion and question period. During the course of the discussions the meeting expressed concern over the inconsistent collection of catch and effort statistics for highly migratory species in the southern and western Pacific.

49. The meeting made the following recommendation:-

Recommendation No.5

The meeting recommended that, as soon as possible, all countries and territories of the SPC area utilise the forms and procedures with respect to migratory species catch and effort statistics as outlined in the report of the Ad Hoc Meeting of the Expert Committee on Tropical Skipjack, 4-8 December 1978. Subject to adequate funding and staffing for the SPC, the meeting recommended that the SPC collect and distribute the resulting catch and effort data to the countries and territories of the SPC. The meeting recognised that in the long term a comprehensive regional catch and effort statistics system is essential and that the above recommendation is an interim measure until such a time as a more permanent arrangement can be made.

X. LIST OF RECOMMENDATIONSSOUTH PACIFIC COMMISSION WORK PROGRAMMEBêche-de-merRecommendation No.1

The meeting recommended that a detailed survey of marketing opportunities available to South Pacific territories of their production of bêche-de-mer should be carried out by a marketing specialist having proven experience of marine products on South-East Asian markets.

Emphasis should be put on precise information on quality requirements in buyer countries and possibilities of advances processing enabling South Pacific territories to derive greater profits from this product.

As a follow-up to this survey it is recommended that information be obtained and communicated to South Pacific territories on a continued basis covering current demand, prices, shipping and grading requirements not only for bêche-de-mer but also for other marine products such as shark fins, trochus meat, etc. as required by the territories.

Information ServicesRecommendation No.2

The meeting recommended that the South Pacific Commission include within Information Services a periodic annotated list of technical fisheries films suitable for pre and post harvest development, extension and training aspects of fisheries development within the region.

SEMINAR SESSIONSResearch on deep bottom fishesRecommendation No.3

The meeting recommended that SPC consider a comprehensive programme to study the effects of the development of fishing on deep water bottom fish resources. It is suggested that this programme be based in one territory so that sufficient data can be collected to determine possible changes in the resources as a result of increased fishing effort. Such information is to be made available to other member countries. The meeting also recommended that the SPC encourage other countries within the region to collect statistics on their deep bottom fisheries.

AquacultureRecommendation No.4

The meeting recommended that SPC try to stimulate co-operation between Pacific countries on aquacultural matters. These should include:-

- (1) Arranging training of personnel.
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EXPERT COMMITTEE ON TROPICAL SKIPJACK

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APPENDIX: LIST OF DOCUMENTS PRESENTED AT THE MEETING

A. Working Papers

1. Country statement - Republic of Kiribati
2. Country statement - Fiji
3. Country statement - Tuvalu
4. Survey of bottom fish resource in the Northwestern Hawaiian Islands, by R.N. Uchida and J.H. Uchiyama and *Bernard M. Ito*
5. Current status of fisheries in the Hawaiian Islands, by R.N. Uchida
6. Anchored fish aggregation devices in Hawaiian waters, by W.M. Matsumoto, T.K. Kazama and D.C. Aasted
7. Country statement - Trust Territory of the Pacific Islands
8. A solar drying system for fish feed production in Tarawa, Kiribati, by B.R. Onorio
9. Results of crown-of-thorn starfish Acanthaster planci reward and control program in Malakal Harbor 28/5 - 8/6/70, by Serge Birk
10. Aerial radiometry and tuna prospection, by M. Petit. *Summary only.*
11. Trochus fishing in New Caledonia, by W. Bour. *Summary only.*
12. The biology of exploitable holothurian populations of the lagoon of New Caledonia, by C. Conand. *Summary only.*
13. Pêche des Etelis en Nouvelle-Calédonie avec mise au point sur les deux espèces à détermination controversée, by P. Fourmanoir *Summary only.*
14. Programmes of descriptive oceanography at the ORSTOM centre in Noumea, by Y. Dandonneau *Summary only.*
15. Summary of activities of the South Pacific Commission in the development of fisheries from March 1978 to December 1979, by J. Crossland and R. Grandperrin
16. Status of aquaculture in Papua New Guinea, by T.T. Kan
17. Fisheries Statement - Truk 1979, by M.C. White and P. Sitan
18. La pêche en Polynésie française *French only.*
19. Country Statement - Papua New Guinea
20. Country statement - Government of Guam
21. Exposé national - Gouvernement des Nouvelles-Hébrides *French only*
22. Country statement - Solomon Islands, by N.P. Stone
23. Country statement - American Samoa
24. Country statement - Kingdom of Tonga

B. Other papers

A statewide fish aggregating system. State of Hawaii, Department of Land and Natural Resources, 1978, 18 pp.

Kewalo research facility, National Marine Fisheries Service, Southwest Fisheries Center, Honolulu Laboratory, Administrative Report H-79-11, 1979, 31 pp.

Southwest Fisheries Center Honolulu Laboratory. Brochure, 1979, 15 pp.

FAO/UNDP Bait culture project in Western Samoa, by D.M. Popper (presented to meeting).

Some aspects of world fisheries training, by G.C. Pringle, Nelson Polytechnic, Nelson, New Zealand.

Meeting of the expert committee on tropical skipjack, 10 December 1979. Background document prepared by SPC skipjack survey and assessment programme.
