

SOUTH PACIFIC COMMISSION

NINTH REGIONAL TECHNICAL MEETING ON FISHERIES
(Noumea, New Caledonia, 24 - 28 January 1977)

A METHODOLOGY FOR SUMMARIZING DEVELOPMENT NEEDS IN THE
FISHERIES SECTOR OF THE SOUTH PACIFIC REGION

by

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* Supported by the International Center for Living Aquatic Resource Management and sabbatical leave from the University of Rhode Island. Attached to the Institute of Natural Resources at U.S.P.

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SUMMARY

A suggestion is offered for an updated appraisal of fisheries developments and needs for this region. A five-part approach might be followed including:

1. a review of the meeting reports, the archives and the consultant submissions of SPIFDA
2. a consideration of relevant work of recent years, particularly of new developments in the region
3. a canvass, country by country, of the fisheries development needs as seen through the experienced eyes of the key people working in the region
4. the development of a series of state of knowledge rectangular matrices as a tool for summarizing individual country needs and for helping to find the common denominators in all of these
5. a well conceived summary interpretation of the entire effort.

Most of the working paper deals with the matrix (step 4) and encourages discussion of its form and possible use.

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A Methodology for Summarizing Development Needs in the Fisheries
Sector of the South Pacific Region

At the outset I stress that this is written from the viewpoint of an outsider suddenly thrust into the region and desperately trying to grasp an overall picture emanating from many man-years of attention to the marine resources problems, years to which most all of you have contributed in a very substantial way.

The attempt at generalizations immediately falls under two headings: those relating to the living and those bearing on the non-living resources. As to the latter, mostly seabed, resources, the desired picture is within easy reach, particularly through the up-dated work and planning of CCOP/SOPAC and its Technical Secretariat. But one encounters a very different scenario with respect to the fisheries, as SPIFDA entered the area with several years of thinking, planning and consultant reports issuing like choice fruit spilling from a cornucopia, as other ventures have come to the fore with varying degrees of success and in various stages of completion, as new institutes, like the CNEOX aquaculture program in Tahiti, have emerged, and as this fisheries group meets annually opening up many exciting questions and settling very few. I dare say that no one has all of this at his fingertips. If he does, it is not widely available to others.

An oversimplified condensation of what is known or ought to be known, and all that has been done and should be done for the fisheries, would be useless. Yet the challenge of arriving at a useful summation faces the University of the South Pacific as it contemplates the role it might play in setting up a Marine Resources Centre to serve with respect to the various sea resources. Reflecting, even casually, one quickly sees that much the same challenge faces the South Pacific Commission, the executive secretariat (namely SPEC) planning a fisheries authority for the Forum, the regional offices of FAO, and other agencies like ICLARM seeking to play an overall helpful part, and ultimately the many island countries of this region.

Each such entity might approach this challenge independently, perhaps quite informally and with an outcome satisfying immediate needs, but I am suggesting that something more systematic would be desirable. A half decade has passed since SPIFDA held the reigns on such matters and a bit of updating, not reworking, and summarization would seem in order. Accordingly I would like to discuss an approach in five parts.

1. a review of the meeting reports, the archives, and the consultant submissions which represent the overall SPIFDA accomplishment
2. a review of comparable and relevant materials of recent years
3. a canvass, country by country, of the fisheries development needs as seen through the experienced eyes of the key people working therein
4. the development of a series of state of knowledge rectangular matrices as a tool for summarizing individual country needs and for helping to find the common denominators in all of these
5. a well conceived summary interpretation of the entire effort.

Admittedly I first went about this backwards, getting absorbed in the matrix approach before wiser, more experienced heads told me what I was missing and made me very conscious of the primary importance of reviewing past work. It does seem, however, that a well conceived matrix plan could serve not only as a tool for the present thinking but as a vehicle to update continuously the deliberations of this body and other interested groups.

As envisioned, one side of such a matrix (let's say the vertical axis) might list the fisheries under such groupings as "high seas", "reef and lagoon", "freshwater", "miscellaneous", and "aquaculture", with the line items under

these headings stated as broadly as feasible. For example, "pelagic fishes" might be a single line item under "reef and lagoon", the various *bachê de mer* might be lumped as another item, all inshore "bait fishes" as another. Aquaculture might list such broad line items as "fin-fish low technology", "fin-fish high technology", "bait fishes", "shrimp", "green mussels", "oysters", "marine algae", and "sea turtles", with provisions to comment on polyculture where applicable. I have even thought of a category under "miscellaneous" called "intertidal gleanings" to cover in one fell swoop the assorted harvests by persons picking over the subtidal flats and reef areas at low tide. You might shudder at such broad categories but the proposed matrix could have plenty of blank lines, not to encourage an endless division of entries but to permit more specific entries where key points would otherwise be lost. The suggested matrix should also have a built-in coding system (Appendix B) encouraging annotations and references where these would lead to vital information.

The categories to be listed along the other axis of the matrix would be more critical. This axis must represent the cumulative thoughts of the prospective users (such as those of you involved in this meeting), advice from prospective interpreters, certainly including resource economists as well as fisheries biologists, and the insights gained from a few trial runs. For a starter, and remember this is only to prime the thinking, a draft of suggestions is presented as Appendix A. You will note immediately that it is under these headings that as much quantification as possible is recommended, probably rough estimates in the main and frequently only "guesstimates" serving as a start toward establishing the dimensions to be dealt with. Under these headings respondents should make generous use of the coding system so as to list references, provide appropriate annotations etc.

In case it has not already become apparent, my thinking is that such matrices should be filled out by or under the auspices of the chief fisheries officer of each country, perhaps with assistance from the perpetrator of the whole scheme. As noted in Appendix B, it might become apparent an

in trying to fill these out, that it would be better to use two matrices for each country, one for urban and one for rural or outlying island areas.

It should be expected that, as an outgrowth of the exercise, users would have not only an optimum summarization at their fingertips but would probably see hitherto undisclosed relationships. Such insights might be increased by the simplest of interpretive efforts such as lining up frequency, catch, and value patterns, etc., etc. At this point, if not earlier, still other matrices for the specific needs of discriminating investigators, and not for laborious country by country preparation, might be attempted. And still other analytical techniques might be applied, such as attempting to put at least some of the information into region-wide tabular summaries ("super" matrices or other formats) and to work more quantitatively where possibilities suggest themselves.

I have overplayed the matrix, partly because it requires the most explanation and partly because it is more open to question and criticism than the first three steps which call for a review of past accomplishments and the canvassing of opinion. All I have actually done thus far is to recommend that workers at the University of the South Pacific review recent materials as thoroughly as they can in laying the foundations for their future work. To the extent that this involves going over past materials, my suggestion simply amounts to urging good professionals to do what comes naturally. However, as some have suggested, a more ambitious effort such as I have portrayed might have broad appeal. Perhaps, as a group, you would like to encourage an effort along lines, with, of course, more critical thought and appropriate modifications.

APPENDIX A.

SUGGESTION FOR HORIZONTAL AXIS OF MATRIX

HARVEST

Total : lbs/yr, U(unknown), R* (in research and development stages)

Subsistence catch : lbs/yr

Catch for cash economy : lbs/yr

Catch for cash economy : US\$/yr

Commitment for fishing: F(full-time), P(part-time, incidental to other activity), C (casual)

Cultural constraints to fishing development: S*(significant), O(none or insignificant)

Status in economy: A (about equal to agriculture), >A (appreciably greater than agr.), <A (less than agr.), I (Industrial economy, fisheries secondary)

Present research and development expenditure by government: US\$/yr.

Present research and development expenditure through assistance funding: US\$/yr.
(add annotation as to funding sources)

KNOWLEDGE

Life history, including migration: F* (essentially fully understood), L (little known), U (unknown)

Stock differentiation, including species and races: F, L, U

Stock assessment: F, L, U

Estimate of relative fishing intensity, i.e. harvest/estimated stock: %

FISHERY PRODUCTS EATEN

Total of fishing products eaten: lbs/capita /yr

Fraction of total diet: %

Harvested and cultured fish eaten: lbs/ capita /yr **

Fraction of total fish eaten: %

Country	_____
Respondent	_____
Title	_____
Date	_____

Tinned fish eaten: lbs/capita/yr **
Fraction of total diet: %
Frozen fish eaten: lbs/capita/yr **
Fraction of total diet: %

It is assumed this is imported.
If not add code no. and appropriate annotations

Is there any evidence of malnutrition: Y* (yes), 0 (no)

PROCESSING

In area of catch: I (icing), D (drying), S (salting), A* (other), 0 (none)
Shipment to marketing outlet: S* (arrangements provided), 0 (no systematic provision)
Storage and icing for overseas shipment: lbs/yr
Canning: lbs/yr.
Marketing practice: D (direct by producer), M* (middle man involved)
Export: lbs/yr.

INVESTMENT PRACTICE

Harvesting equipment: T (traditional, i.e. crooes, etc.), A* (advanced boats and gear), H (high technology equipment, i.e. catches boats over 65 feet, etc.)
Indigenous capital: US \$
Outside capital: US \$
Amount outside capital in joint ventures: US \$
Proportion of outside capital in point ventures: %

* Wherever asterick is shown, it is especially important to add an annotation reference, using the appropriate corner space in the boxes for code number.

** Using the code number system make reference to annotation showing average cost per lb to consumer.

APPENDIX B.

**Suggested Instructions for Entries in the Proposed Matrix, Plus
Accompanying Reference/Annotation Sheets**

Bear in mind that the overall objectives is to develop a rectangular tabular summarization as a guide to a better understanding of the fisheries sector. If it is necessary to differentiate between urban and rural or outlying island areas, it may be useful to fill out separate matrices rather than to clutter one with attempts at multiple information.

Make liberal use of Annotation/Reference sheets to enlarge on points that this matrix treats inadequately. For this purpose each box in the matrix has space in the upper left hand corner where you can enter a code



number referring to annotations you might wish to make; also there is a space in the upper right for a code number to reference citations.



The lower part of the box is for the main entry as called for in the headings across the top of the matrix.

Cross hatching will be used to block out boxes where no entry is expected.
