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**FISHERIES RESEARCH AND MANAGEMENT PROBLEMS IN  
KIRIBATI**

**Country Statement**

by  
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1. Fisheries research and related management problems in Kiribati are summarised. Although no clearly defined policy on research in the Fisheries Division of Kiribati exists, a large amount of activity has occurred in this area in recent years largely as a result of the development and extension activities of the Fisheries Division.

2. Existing Fisheries Division policy and activities in the fields of aquaculture, boat construction, seaweed cultivation, boat building and, resource assessment and data collection are summarised. Problems of implementing research programmes in the country and the future requirements of the Fisheries Division with respect to research are presented.

## **1. Introduction**

As a country statement, this paper aims to summarise fisheries research and related management problems in Kiribati. The summary includes the present ongoing Research activities; the problems that have been encountered; the Future Research Requirements; and the main research priorities of Kiribati with special emphasis on the Inshore Fishery Resources.

To date no clearly defined policy towards research has been identified and yet a suprisingly large amount of research activity occurs within the Fisheries Division, albiet some of it in an ad-hoc way.

## **2. Research Policy**

To date there is no clearly defined policy towards research. However the development and extension roles of the Fisheries Division neccessitate some form of research activity before the implementation of any large developmental proposal. Because of the lack of any well defined policies it is important for the Division of to clearly identify and define any research requirements and put into perspective within the framework of the National Development Plan, including a policy relating to the strategy for implementation

Possible implementation strategies are:

- (i) The Fisheries Division to conduct the research itself. Are the resources available (i.e. funding, staff, equipment)
- (ii) A third party to conduct the research, i.e. private research institutions, local (if any) or from overseas. In this case funding and all necessary resources will be provided externally, however adequate provision should be taken to ensure that the research follows the required direction.
- (iii) Joint Ventures, i.e. involving both the Fisheries Division and a third party. The Fisheries Division has a lesser commitment to allocation of resources but still has a more direct control over the direction the research may take as well as the reporting back of results.

### 3. Present research activities

The main areas of research in the Fisheries Division are:

- (i) Fishery Resources (The stock)
- (ii) Fishing Technology (the method of exploiting the stock)
- (iii) Post harvest technology (Preservation and preparation of the catch)
- (iv) Market Requirements (Disposal of the catch)

In Kiribati there is a lack of research institutions who may concentrate their research on any one of the areas and therefore it is very important for the Fishery Division to give priority to any research area in terms of:

- (i) Is there a suitable resource available and if so
- (ii) Is there a market for that resource.

Generally fishing and post-harvest technologies are usually developed elsewhere and therefore can be applied with some modification to suit the local conditions. Below is a list of the past and present research activities of the Fisheries Division and their executing bodies.

<u>RESEARCH ACTIVITY</u>	<u>RESEARCH AREA</u>	<u>EXECUTING BODY</u>
1. AQUACULTURE		
a) Increased production through fertilisation of ponds	Resources	UN Consultant/ FD
i) integration of milkfish with livestock		
ii) effect of liquid organic manure on natural pond productivity		
b) Milkfish growth monitoring	Resources	FD
i) using different supplementary feeds.		

## 2. BOAT BUILDING UNIT

- |    |                                       |                    |           |
|----|---------------------------------------|--------------------|-----------|
| a) | Technical design trials on KIR canoes | Fishing Technology | UN TCO/FD |
|----|---------------------------------------|--------------------|-----------|

## 3. EXTENSION UNIT

- |    |   |                             |               |
|----|---|-----------------------------|---------------|
| a) | Black Coral Survey  | Resource                    | CCOP-SOPAC/FD |
| b) | Giant Clam Survey   | Resource                    | ICLARM/FD     |
| c) | Deepwater Prawn Survey  | Resource                    | FD/SPC        |
| d) | Deep bottom fishing trials  | Resource/Fishing Technology | SPC/FD        |
| e) | Abemama Ice-Plant Project   | Post-harvest/Marketing      | FD            |
| f) | Temaiku block ice c.f. Flake ice sales  | Post harvest/Marketing      | FD            |
| g) | Export market assesments by trial shipments and Enquiries (salt fish, B.D.M. sharks fins) | Marketing                   | FD            |

## 4. SERWEED

- |    |  |                        |           |
|----|--|------------------------|-----------|
| a) | Viability of seaweed culture in Kiribati   | Resources              | UK TCO/FD |
| b) | Market assesments by trial shipments (including compaction trials)   | Post harvest/marketing | FD        |
| c) | Growth Monitoring of the three different species of <u>Eucheuna</u> seaweed ( <u>Eucheuna cottonii</u> <u>E.spinosum</u> and 'special' <u>cottonii</u> ) | Resources              | FD        |
| d) | Alteration of seaweed species  | Resources              | FD        |

**5. RESOURCE ASSESMENT AND DATA COLLECTION**

- |      |  |           |    |
|------|--|-----------|----|
| a)   | Baseline Resource<br>Assesments (Fanning<br>and Washington)                | Resources | FD |
| b)   | Present level of<br>Resource Exploitation                                  | Resources | FD |
| c)   | Baseline Data Collection   | Resources | FD |
| d)   | Market Survey of Tarawa  | Marketing | FD |
| e)   | Experimental Fishing<br>(using gillnets in<br>South Tarawa) To look<br>at: | Resources | FD |
| i)   | catch and effort relationships   |           |    |
| ii)  | population dynamics  |           |    |
| iii) | population estimates   |           |    |

**6. PRIVATE INSTITUTIONS**

- |    |                    |                                   |         |
|----|--------------------|-----------------------------------|---------|
| a) | Ie bun transplants | Resources<br>(project terminated) | AROU/FD |
| b) | Baitfish survey    | Resources                         | AROU    |
| c) | Fish Poisoning     | Resources                         | AROU    |

**4. Problems in implementing research programmes**

The main problems as far as research for the Fisheries Division is concerned; can be briefly summarised as:

- (1) Lack of a clearly defined policy (as mentioned above)
- (2) Lack of staff and technical know-how
- (3) Lack of facilities (such as laboratory equipment, research vessels.)
- (4) Lack of funds
- (5) Co-ordination of Research Activities.

## **5. Future research requirements of the Fisheries Division**

The following briefly outline future requirements that can be identified in relation to the current National Development Plan. Each department within the Fisheries Division has their own priorities. Below is a list summarising the requirements within each area:

### **A. FISHERY RESOURCES**

Two general areas may be considered important.

- (i) Baseline studies of 'fish' stocks including monitoring the present state of exploitation of fish stocks.
- (ii) Culture of indigenous and non indigenous species and their implications

More specifically the above will include:

- (i) Resource Assesments of specific islands to establish baseline information on the stocks available.
- (ii) Resource Assesments of all islands in Kiribati to provide comparative data on species composition and catch rates by a variety of fishing methods.
- (iii) Specific stock assesments as a follow up to the (i) and (ii) more directed on a particular target species considered economically important.
- (iv) Continual monitoring of the state of exploitation of the stocks.
- (v) Establishment of population dynamics and biological data of important species such as Lethrinids, Lutjanids and deep bottom Etelids.
- (vi) Culture trials with new and existing species. e.g. seaweed, prawns, pearl, lobsters, clams.
- (vii) Seeding trials of natural reefs to increase the abundance of certain resources e.g. pearl, giant clams, lobsters, seaweed.

(viii) Milkfish Culture in Kiriritimati

- induced breeding to utilise the existing brood-stock
- stock assesment in the 1100 ha pond
- rate of milkfish fry recruitment into the pond system during peak/lean seasons of diffirent times of the year
- growth rate in the hypersaline ponds.

B. FISHING TECHNOLOGY

The two main areas for research are:

- (i) the introduction of new fishing technologies
- (ii) improvement of existing and locally developed technologies

More specifically future research needs include:

- (i) technical design trials on other designs of the KIR canoes and their use for ocean fishing
- (ii) integration of canoe design with fishing gear design
- (iii) gear design modifications e.g. alternative lures, mesh selection/hanging ratio trials with nets, effective fishing areas of nets.
- (iv) new fishing techniques e.g. squid jigging

C. POST HARVEST TECHNOLOGY

In this area a lot of information required can be obtained from other sources and therefore the main research need is to apply them to the local conditions. The specific areas for research include:

- (i) trial shark-skin production
- (ii) development of new and novel products
- (iii) feasibility study of ice use on outer islands
- (iv) solar drying of fish in wet islands
- (v) quality investigations of fish products.

D. MARKET REQUIREMENTS

Generally the research required is essentially gathering 'information' such as - location of markets (internal and external), species required and how should they be processed, access to the markets, packaging requirements the markets and skippers want. Specific future research therefore would include:

- (i) regional market evaluation for dried fish
- (ii) trial shipments of shark fins, and possibly shark skins
- (iii) trial air-freighted shipments of fresh (iced) fish to Majuro and Hawaii.
- (iv) estimation of internal market sizes in Kiribati and their potential for expansion.
- (v) develop locally new and existing products and assess their marketing values, internally and externally.

To conclude it should be obvious from this paper that although Kiribati has no well defined policy for research it is well justified that there is an immediate need for one. With the amount of research activities that has and will be conducted in the Division, it seems necessary for the provision of proper research facilities and increases the availability of technical knowledge, either by training local personnel or obtaining overseas expertise.