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COUNTRY STATEMENT - KIRIBATI

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COUNTRY STATEMENT

KIRIBATI

Introduction

Fisheries Division under the Ministry of Natural Resources and Development is concentrating its effort in assisting the local fishermen and particularly on the outer island to increase fish production as a protein source and to encourage the fish marketing as an alternative to making money. There are also "cottage" type related industries which falls under the second category and form part of the fisheries development. The programmes form the basis of the fisheries extension programme carried out by the Fisheries Assistance (FA) who are present on all islands in the Gilbert group and one at Kiritimati. They are as follows:

1. A Revolving Fund for fishing gears.
Gear is supplied at cost price to fishermen on the Outer Islands and in Tarawa (the urban centre of Kiribati). This is organised through the Headquarters where the bulk store is situated, and gears are sent to the outer islands in response to the individual requirements of the islands as informed by the resident fisheries assistant on the island. Gears are airfreighted. In excess of a quarter of a million dollars (Aus) worth of gear have been distributed since the inception of the programme in late 1983, an average of more than $1000 per week. For a country of only 60,000 people, this is a remarkable quantity.

2. Boatbuilding
The demand for the two main canoe models produced is increasing particularly for the KIR 8,a V-bottom hull, which is favoured on the outer islands because of the better sailing performance. The other model, KIR 4 with a flat- bottom hull, uses the engine as the main propulsion, and is favoured mainly in the urban area, Tarawa. There are two contractors building the orders from the fishermen and this resulted in a backlog of 14 outstanding canoe orders. Plans are already underway to satisfy this requirement by starting another boatbuilder on Tarawa and to increase their output to the maximum in order to fill the outstanding orders quickly.

The boatbuilding shed at the Fisheries Headquarters is at the moment constructing a KIR 4 canoe for Tokelau UNDP Integrated Atoll Development Project utilising the new boatbuilders as part of the practical training. Fish aggregating device (FAD) construction is also made in the shed involving one private contractor.

Up to date there were 39 canoes sold from the project with 14 outstanding orders.

Commercialisation

The idea of commercialising the project is still unclear as the administration of the project is very difficult to hive off unless a competent private boatbuilder is identified. However the construction side of the project is fully commercialised which involves the canoe and sail makers. It is therefore envisaged that Fisheries Division will continue to play a major role, in the project as part of its extension services.

The demand for the canoes is difficult to forecast and because of its competitiveness in price, the high demand is as predicted. However, the materials ordered from overseas is increasing in price and soon the demand will level off and even decreasing as the imported boats gets competitive. Meanwhile the restrictions on the number of boatbuilders is important at this stage.

3. Experimental Fishing

An ongoing FAD programe was commenced this year aimed at providing each island in the Gilbert group with a FAD for use by subsistence fishermen. It is aiming to deploy 14 FADs in 1987,6 in 1988, and a further 4 in 1989. This programme is being funded by New Zealand. To complement, the Canadian government has funded a comprehensive experimental fishing programme which concerntrates on fishing techniques which have or are being developed for fishing around FADs. At the start of this year a government fishing company, Te Mautari Ltd, was given approval to manage the Outer Island Commercial Fishing trial project on two islands, Butaritari and Abemama. The target species is tuna and a composite fleet of plywood skiffs and KIR 4 canoes (with trolling booms) will be pursuring the fishery. Oceanic gill netting is to be experimented with around FADs, aimed at giving the smaller Mautari vessel an alternate fishery in times of low biting schools. A SPC/Kiribati Government Deep Water Prawn Survey conducted in Feb/March of this year is to be followed up by a ongoing survey of other islands including Kiritimati. Shark gill netting to be trialled in the lagoon on the ocean reef and around FADs would produce shark meat for local consumption and fins for export.

4. Seaweed

The seaweed project in Kiribati is reaching a new phase of commercialisation after running the trial planting period since 1971. The main species grown is Eucheuma cottonii and it is now established that it can grow well within the Kiribati lagoon islands.

The commercialisation phase of the project started off by a visit to the Coast Biologicals Limited, New Zealand in 1986, which processes the raw dried product to semi-refined carrageenan and marketed the product world-wide. This followed the export of the Kiribati Seaweed of 65mt to the company.

The bulk of the 65mt seaweed came from the South Tarawa lagoon where the project concentrated its trial effort. About 30 percent came from the other outer islands which have great potential for seaweed growth namely Butaritari, Abaiang, Kuria, Abemama and Beru. The rest of the lagoonal islands are still investigated.

Commercialiation Approach

This title will be discussed into three sections: production, management and marketing.

4.1 Production

Given that the seaweed can grow in Kiribati it is a matter of increasing the production. Since Tarawa can grow a 100mt/yr, the other potential islands can easily reach the figure and production can be projected from an increase of 100mt/yr as the emphasis shifted from are island to the other.

To encourage the increase in production the farmers are now forced to expand their farms to 300 lines at 10 plants per line or a production area of 0.1ha at a minimum, as compared to the present average farms of 210 sq.m. The raw dried seaweed will not be accepted for weighing from the farmers who have not reached the minimum size farm.

4.2 Management

The management of the seaweed project is still under Fisheries Division. In order to achieve full commercialisation the project must be made independent to account for the expenditures/income; before the project is regarded as "viably commercial". Preparation are underway for this change; as the negative effect must also be regarded:

4.3 Marketing

Actually this section is the main emphasis of work for the management.

The New Zealand market visit revealed fundamental difficulties in the export of seaweed which is freight and the product quality. Actually, the problem started from the outer islands at a point of purchase. Fortunatelyy the 1987 Seaweed Consultancy trip to the Phillipines showed ways of overcoming the problem which could be tried in Kiribati.

a) Freight

The major difficulty here is in the volume/weight ratio and to lower it various methods were used including hydraulics, wool press manual machines, shredding and just compressing by a heavy pole. On the outer islands where there are no heavy duty machines the latter methods are appropriate. Similar results were obtained locally as compared to the Phillipine compression rate of 68kg/sack to give a 17mt seaweed weight inside a 20ft container, using the pole and the shredding methods. The moisture contents of the Kiribati seaweed is lower than the Phillipine seaweed of 37-40%, which affects the compession rate. It is emphasized here that due to the local internal freight a form of compession must be made on the outer islands and once in Tarawa the sacks must be ready for export. At the moment the bales of 0.6m3 from the wool press are sent to New Zealand via Fiji on the Forum Line which give us concession rate when using the container load.

b) Quality

The Coast Biologicals Ltd, New Zealand, is concerned with the impurities in the raw dried seaweed which are salt, sand and other unwanted materials including tie-tie. Kiribati seaweed is generally better than the 5 percent wastage rate from the Phillipine seaweed. However there are still difficulties in this area but this requires education to the farmers and a proper quality control programme at a point of purchase.

c) Other difficulties

The Kiribati seaweed suffer from the seaweed Epiphyte and Ice-ice infections. However strong westeries which started late last year is still continuing and causing considerable damage to the farms throughout the country.

5. Statistics Collection

5.1. Artisanal Fisheries Survey.

The artisanal surveys are done on an household interview type basis, and are planned so that at the most they will take seven days to conduct, this makes it convenient for co-ordination of the different programmes and to fit with the air travel schedules.

Initially the surveys occur on a three monthly cyle to allow time for analysing the data (by hand). Since the acquisition of an apricot microcomputer the surveys became more regular (once a month).

Islands that have been surveyed by the Unit are listed below:

Islands:	Date surveyed
Marakei	1985
Butaritari	1985
South Tarawa	1985 (twice)
Abemama	1986
Maiana	1986
Nonouti	1986
Tabiteuea North	1986
Marakei (by request)	1986
South Tarawa	1986 (twice)
Beru	1987
North Tarawa	1987
Nikunau	1987
South Tarawa	1987

5.2. Landing Data Collection.

This part of the programme is continous. On South Tarawa it is conducted by the two FAs from the Unit while on the Outer Islands it is the responsibilities of the repective FA on the island. The programme involve visits to local fishermen when they land their catches. The data collected are weights and numbers by species of the catch. The more update landing data collected are from South Tarawa, while the outer islands data are less frequent. At the start of the programme the fishermen are co-operative, but since 1986 there was reluctance (by the fishermen) due to the length of time taken.

5.3. Other Fisheries Related Statistics:

In this part of the program, the companies exporting fish are monitored. Data from the Mautari Ltd, includes the different fishing vessels catch and amount of bait used. Marine Export Division of Christmas Island includes data on all marine products exported mainly to Honolulu.

Data received from the above are more reliable since these fishing companies keep their own records. The only problem experienced was the reliability of the comapany representatives to send in the data regulary.

6. AQUACULTURE PROGRAMMES

6.1. Fish Farming - Temaiku Tarawa

6.1.1 Milkfish (*Chanos chanos*)

Milkfish culture aimed to produce bait and foodfish is being conducted at the Temaiku Fish Farm comprising of 43 ponds of various sizes encompassing an area of 80 hactares. Ponds less than 2 hactare are used to raise baitfish and larger ponds of 7 hactare including the feeder canals for foodfish production. Baitfish is cultured intensively using organic fertilisers and artificial feeds and usually takes 8-10 weeks for fry to reach baitsize (TL. 8-15cm or 8-12gms). The oversize bait are allowed to grow extensively in the larger ponds for 3-4 months before being marketed overseas (mainly to Nauru) or locally. The current price for milkfish live bait and foodfish is $1.75/kg and $2.50/kg respectively. In 1986 the Temaiku Fish Farm have sold 19532kg of bait to the Te Mautari Ltd and 9635kg of foodfish to the Nauru market.

To increase milkfish production, various trials are now being conducted on the use of organic fertilisers (chicken manure, leaves, seaweeds, seagrass) as well as the use of imported feeds. Improvement on fry collection to increase fry supply to the farm is also being initiated.

6.1.2 Mullet

Recently, mullet is included in the culture programme at the Temaiku Fish Farm.

At present, the emphasis is more on fingerling collection and transport to the fish farm. The collection involves the use of a 100 metre seine net using hired workers and an aerated bait tank mounted on a 2.5 ton truck is used for transporting the mullet fingerlings. The extensive culture trial is being conducted in a 2 hactare fish pond with minimal inputs applied.

6.1.3 Tilapia (**O. mossambicus**)

Tilapia is an exotic species introduced into the country in 1963. The fish is considered a pest in ponds due to its predation and competitive effects on milkfish growth. Tilapia is quite prolific and quite often the fish population is stunted. As a result, an average tilapia could not grow more than 10 cm which is not attractive for marketing. However, it has been observed that tilapia could attain 250-350gms in bait ponds at the Temaiku Fish Farm when allowed to grow for some time. Being raised in brackish water, the fish is well accepted and quite a number of big size tilapia have been sold locally. It is quite obvious that the fish may benefit from the manured pond as well as the continuos thinning of the population when milkfish bait is harvested.

Tilapia/pig culture intergration have recently been included in the Temaiku Fish Farm culture programe. A pig pen have been established along the embankment of a 1 hactare pond for culture trials. It is hoped that platable tilapia will be sold from the farms in the future.

6.1.4 Fry Industry

Milkfish fry collection centres have been established on several outer islands to support the baitfish and foodfish production at the Temaiku Fish Farm in Tarawa. These centres are managed by stationed fisheries assistant who usually supply the collectors with drag nets, storage containers, fry payments and air freight of fry to Tarawa. The current price of milkfish fry is $5.05/1000. In 1986 the total fry supply is 1.6 million. It is envisaged that mullet fry would be included in the future.

6.2. Fish Farming - Outer Islands

Milkfish culture for food is traditionally practiced on several outer-islands in natural ponds inland or enclosed open water bodies of tidal mud flat resulting from causeway or road constructions. The natural ponds inland are usually stocked artificially while the latter type of pond is self-stocking when milkfish fry finds its ownn way through small stone openings. There is increasing interest from the island councillors on this development but the major problem for improvement is the organisation of the construction machinery involved and their transportation from Tarawa to the outer islands.

6.3.Fish Farming - Line and Phoenix Island Group

6.3.1 Kiritimati

The total milkfish pond area on Kiritimati is 1100ha. The ponds of various sizes are inter-connected with channels and with two main sluice gate openings (of 10 mtrs wide) feeding the ponds with lagoon water.

An extensive system is being practiced in these ponds and therefore milkfish production relies mainly on the natural ingress of fry through the main sluice gates and natural food available in the ponds. Milkfish produced is usually marketed to Hawaii through the Marine Exports Division with a preference a 2lb fishes costing 40 cents/lb. The Hawaii market demands 2,000lbs of filleted milkfish per week.

6.3.2 Tabuaeran and Teraina

An aquaculture development plan had been developed for the two islands in line with the Resettlement Scheme. The main aquaculture goal for the two islands is to supplement fish protein and generation of income.

8. Conclusion

The two most important areas carried out by the Fisheries Division to increase the fishing capability of the outer island fishermen are in the fishing gears and the boatbuilding programmes. These projects are very successful and eventhough they are simple projects, they are very vital in the remote islands of Kiribati. The decrease in the tinned fish imports over the years can be regarded as a significant effect.

The main source of income on the outer islands is by cutting copra. The division however is engaged in alternative income generating projects. Fish marketing through the increased fish production progammes as mentioned above is greatly practised in the urban and to a lesser extend in the rural areas. Other activities include seaweed production and marketing, the buying of milkfish fry from the fishermen and the boatbuilding contracting activities including the sailmakers.

This year is a preparation period for some of the projects to be hived off next year as commercial entities, particularly the seaweed project and the Tamaiku fish farm.