REPORT OF
THE COUNTRY STUDY
ON THE MALDIVES

March, 1983

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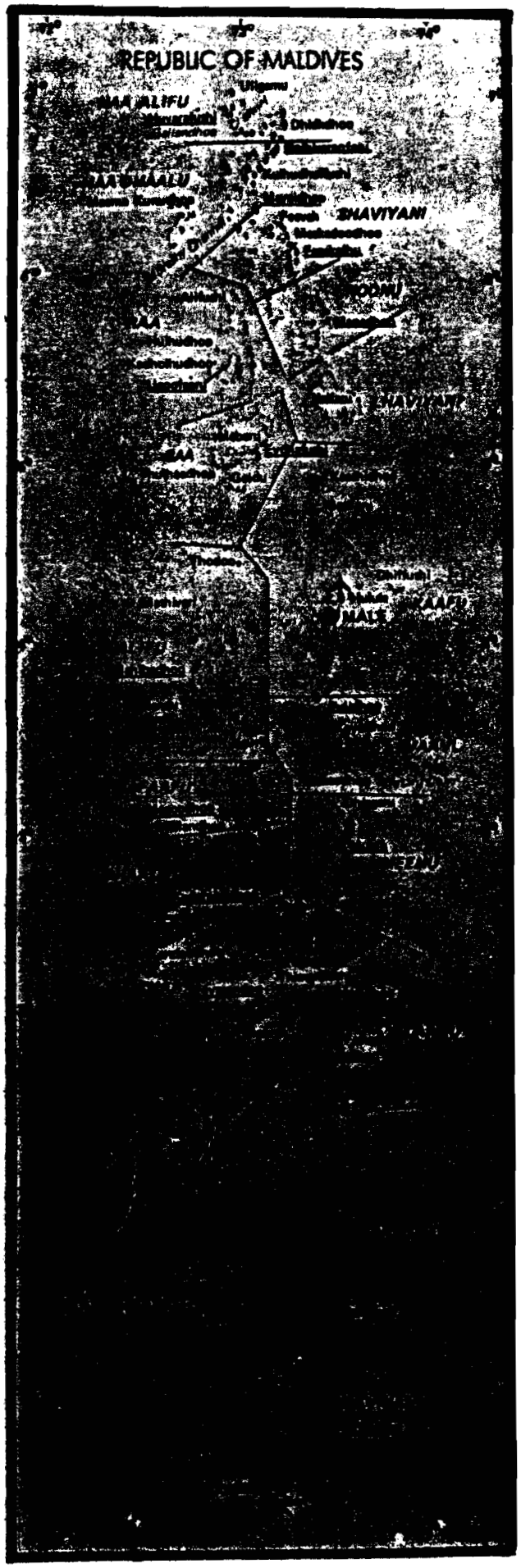
Country Study on the Maldives



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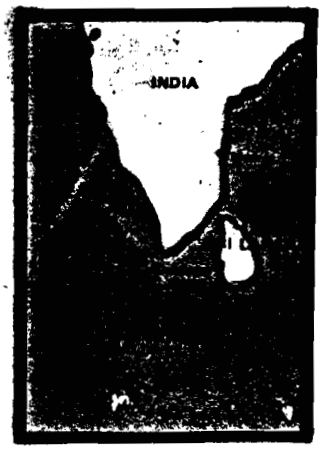

PURSHOTTAM LAL

March, 1983

PREFACE

This is a brief country report on Maldives which has been prepared after a short study tour of that country lasting over 10 days. The study was undertaken on behalf of the Asia Regional office of the International Development Research Centre, Canada (IDRC). The scope of the study was:

(a) to obtain information on major research institutions in Maldives and their potential and constraints;
(b) to obtain information on Maldivian Government procedures to be followed for the receipt of IDRC funds by research institutions — both Government and private — for execution of research projects;
(c) to highlight research priorities in the Maldives in relation to IDRC programme concentrations; and
(d) to obtain information on major donor agency activities in the Maldives.

The report has been prepared on the basis of the material that could be collected during the short visit to Maldives from various Government Departments and after personal discussions with concerned Ministers and officers in the Ministries of Planning & Development, Fisheries, Health, Foreign Affairs and with the Manager of Maldives Water & Sanitation Authority as well as with WHO's Programme Coordinator and Representative stationed in Male. But for their whole hearted cooperation, it would have been extremely difficult — if not impossible — to collect the data and prepare the report.

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I. Overview of Maldives social and economic situation

The Republic of Maldives is an archipelago of 1200 tiny coral islands of which 202 are permanently inhabited. The islands are spread over an area of 90000 sq. kms., but the total land area of the Republic is about 300 sq. kms.

2. The population of Maldives, according to the 1977 census, was reckoned at 142,832. By 1981, it had reached a figure of 156,000; at the end of 1982, it was expected to be around 160,000. The population is growing at an annual average rate of 2.8 per cent. Even assuming that there may be a gradual decline in the annual growth rate from 2.8 per cent to 2.2 per cent, it is expected that the population may reach a figure of 248,000 by the turn of the century.

3. Male, the capital, has a population of about 34,000 persons with an area of 1.586 sq. kms., thus indicating a very high density of population. Because of large disparity of income levels between Male and other atolls, there is a continuous migration of population to Male, thus leading to serious distortions.

4. The economy of Maldives is primarily based on three export activities: fishing, tourism and shipping. In the field of agriculture, the scope is rather limited because of shortage of cultivable land and that too of a poor quality. Industry is limited to traditional boat building and some handicrafts, though recently a fish cannery and two garment factories have been established in Maldives.

5. At the end of 1981, Gross Domestic Product (GDP) had reached a figure $ 51 million or a per capita product of $ 328 at 1980 price level.* By 1982, the GDP had increased to $ 55.8 million and the per capita product to $ 341. During the years 1978-81, the GDP has increased at an annual average of about 13%. However, the increase during the years 1981 and 1982 was estimated at 8% and 9% respectively. The

*According to the World Bank's Economic Report (December, 1980), the GDP in 1978 amounted to US $ 22.5 million with GNP per capita of US $ 160.

Ministry of Planning and Development have estimated that over the three year 1983-85, the GDP may further grow at a rate of about 8 - 9% per annum because substantial investments will be made in the Social services sector, industrial infrastructure, tourism and development of other atolls, which will not yield high returns immediately. This period will therefore be a period of consolidation of economic gains.

6. Fisheries provide the mainstay of life in Maldives. It employs about 44% of the labour force and in 1981 contributed about 16% of the total Gross Domestic Product.

Fish production during 1977 to 1981 varied from 26,800 tonnes to about 35,000 tonnes. Of the total of about 35,000 tonnes in 1981, about 15,000 tonnes (43%) was consumed locally and 20,000 tonnes (57%) was exported.

The fish catch is expected to increase at the rate of about 8 - 10 per cent per annum over the next few years. There is urgent need for diversification of fishing - not only by adding more species but also in the methods of fishing. With fisheries research and introduction of domestic refrigeration as well as completion of mechanisation facilities, it is expected that export earnings and local consumption of fish may increase in the next few years.

7. Maldives has so far been extremely successful in marketing its natural blue and green sea, white coral sands and warm sunshine. Tourism is now a very important sector in Maldivian economy - both in terms of foreign exchange earnings as well as for other infrastructural developments. The number of tourists visting Maldives have increased from 1500 in 1973 to 50,000 in 1981. Since the establishment of the first hotel in 1972, 40 resort hotels have been established with a capacity of over 3500 beds. Earnings from tourism have increased six-fold during 1977-81 - from $ 3.1 million in 1977 to $ 18.3 million 1981. Male international airport has also been expanded largely because of the growing tourist traffic.

There is considerable potential for further development of tourism. By 1985, the number of tourists may cross the figure of 100,000 necessitating an increase in the number of beds to about 5000. By that time, it might become necessary to construct another airstrip to handle the tourist traffic.

8. Shipping is another important sector in Maldives economy. Maldives Shipping Ltd. (MSL), a public sector undertaking, provides the shipping services. In 1981, MSL had a fleet of 41 vessels and carried freight to the extent of over 1.1 million tonnes. It also employs 1505 persons of which a large majority of them are Maldivians.

Shipping industry at present is passing through a difficult phase largely because of the world recession. However, with the resumption of world trading activities, it is hoped its operations would increase world wide, with consequential increase in profits.

9. While Maldivian economy has no doubt made rapid strides during the last few years, the progress in the Social Services sector is rather tardy. In the health and sanitation sector, a lot more needs to be done and that too on a top priority basis. Drinking water in Male and the atolls is polluted and remains a serious health hazard. Similarly, education and training constitutes a major constraint. There is an acute shortage of doctors, teachers, administrators, financial managers and experts. There is also urgent need for a regular transport and communications system, which may link Male with the other atolls and the atolls themselves. In any short or medium-term plan, therefore, high priority will have to be given to these sectors, even though the economic returns from these sectors in the next few years may not be commensurate with the investment outlays.

II. Planning : objectives and priorities

The principal objectives for the economic and social development of Maldives are:-

(i) to improve the standard of living of the people through increase in the national product and foreign exchange resources;

(ii) to improve health, sanitation and educational standards;

(iii) to remove the disparity in the economic and social progress of Male and other atolls; and

(iv) to achieve self-reliance as early as possible so as to avoid, in the long run, dependence on foreign assistance.

The Ministry of Planning & Development hopes to achieve the above objectives in a phased manner. It is expected that by the turn of the century, these objectives may by and large be fulfilled. However, in the interim period, it would be essential for Maldives to seek foreign aid from friendly countries and institutions. For the years 1983-85 they have drawn up a plan which would entail a developmental outlay of about US $ 130 million which is about 2½ times the outlay during the last 3 years 1980-82. Out of this, about $ 55 million would be raised from internal resources and for the balance, external financial assistance of about $ 75 million would be sought - $ 10 million by way of balance of payments support and $ 65 million as development assistance. The table below would indicate the sectors on which developmental expenditure would be incurred during the next three years 1983-85:—

	(In US million $) Estimated outlay during the years 1983-85
Fisheries	24.9
Tourism	28.2
Health & Sanitation	22.5
Transport & Communications	26.3
Education	7.2
Urban Development	6.4
Industry	4.6
Agriculture	1.3
Energy	3.6
Public Administration	2.3
Other atolls development	4.1
Total:	131.4 or say 130 $ million

The above table clearly indicates that Maldives have given high priority to fisheries, tourism, health and sanitation, transport and communications and education. These areas account for over 80 per cent of the total developmental outlay during 1983-85. Some of the projects in these sectors are indicated below:

	Amount required during 1983-85 (In US $ million)
Fisheries Stock Research & Resources Survey	3.906
Marine Research Institute	0.529
Second Maldives Fisheries Project	9.116*
Fishwealth Exploitation Project	9.860*
Feasibility Study for fish processing and canning	0.050*
Fisheries Management Planning	0.100
Second Tourist Zone Tourism Centre	12.510
Second Tourist Zone Resort Construction	15.399
Water & Sanitation at atolls	7.320
Male Water and Sewage	10.100*
Control of epidemics and diseases	1.381
Communicable diseases - prevention and control	0.064*
Health Services development	0.218*
Nutrition Action Research Project	0.085*
Population activities	0.600*
Upgrading of Islands Primary Schools	0.750
Construction of Primary and Secondary Schools in Male	1.228
Curriculum Development and Textbook Production	0.626
Construction of a Liberal Arts Centre	1.050
Modernisation of Maldives Shipping Ltd.fleet	8.000
Male and Hulule Harbour Development	1.717
Upgrading Telephone System in Male	3.555

* Funding sources already found or in sight.

III. Role of foreign assistance in Maldives economy

During the years 1977 to 1981, foreign aid was received by Maldives to the extent of about $ 48 million. Out of this, $ 11.5 million was in the form of outright grants and $ 36.8 million in the form of concessional loans. For the year 1982, aid was received for an amount of $ 11.7 million — $ 4.2 million in the form of grants and $ 7.5 million in the form of loans. Thus, for the six years — 1977 to 1982, foreign aid of $ 60 million was received and this constituted a large part of the total developmental outlay during these years. Foreign aid was, in fact, mainly responsible for the construction of the Male international airport, mechanisation of fishing vessels and purchase of cargo ships.

The following table indicates the utilisation of foreign aid during each of the years, 1977-82:—

(In US $ million)

	1977	1978	1979	1980	1981	1982	Total 1977-82
Grants	0.9	5.0	1.7	2.6	1.3	4.2	15.7
Loans	1.6	2.4	2.9	18.0	11.9	7.5	44.3
Total	2.5	7.4	4.6	20.6	13.2	11.7	60.0

Up to the year 1981, the outstanding debt amounted to $ 36 million. By the end of 1982, it was estimated to be of the order of $ 43 million.

The structure of Maldivian external debt would indicate that most of the loans were provided by OPEC countries on highly concessional terms. Assistance has also been provided by the World Bank affiliate IDA, IFAD, UK, EEC, Japan, Islamic Development Bank (IDB), UNDP etc. The following table will indicate the types and terms of loans which have been provided to Maldives during the period 1977-81:-

	Authorised amount (in millions)	Interest rate per annum	Repayment period	Currency of loan
1. International Airport				
Kuwait Fund 1977	7.70	1.5%	1982-98	KD
Saudi Fund 1979	9.13	2%	1983-97	SR
Abu Dhabi 1979	2.18	3.5%	1982-91	DH
OPEC Fund 1980	1.00	0.75%	1983-98	US $
Saudi Fund	2.72	2%	1986-2001	SR
Meridian Int. Credit Corpn. 1981	0.74	7.5%	1982-86	UK £s
Meri. Inter. Credit Corpn. 1981	0.63	7.5%	1982-86	UK £s
2. Other transport				
Short Bros. Ltd. 81	1.85	7.5%	1982-86	UK £s
OPEC Fund	1.00	0.75%	1986-2001	US $
ADB	1.00	1%	1991-2021	US $
Islamic Dev. Bank	3.00	6%	1983-84	US $
3. Telecommunications				
Abu Dhabi - 76	1.09	2.5%	1981-96	DH
4. Fishing				
IDA	3.20	0.5%	1989-2029	US $
Kuwait Fund 1980	10.39	1%	1985-2000	KD
5. Balance of Payments.				
OPEC - 1977	0.50	0.5%	1982-91	US $
OPEC - 1979	0.8	0.5%	1984-94	US $
OPEC - 1981	1.0	0.5%	1982-90	US $
OPEC - 1981	0.6	0.5%	1982-91	US $
6. Maldives Shipping Lines				
Merchant Shipping Kuwait Fund 80	5.376	3%	1983-89	KD
IDB-1981	3.46			US $

During discussions in Male with Mr. Hassan Sabir, Under Secretary for Statistics, Mr. R.C. Desai, Economic Adviser and with H.E. Mr.Abdul Rasheed Hussain, Deputy Minister for Planning and Development, it transpired that at the Asia Pacific Round Table meeting of LDCs and their Development Partners to be held in Geneva in May 1983, the Government of Maldives would indicate their requirements of foreign aid for the years 1983-85. These requirements are estimated at about US $ 75 million - $ 10 million by way of balance of payments support and $ 65 million for various projects in the field of fisheries, tourism, transport and communications, agriculture, health and sanitation, urban development etc. If foreign aid to the extent desired becomes available, it would help Maldives immensely by consolidating the gains already achieved during the last five or six years and keeping the growth rates at around 8-9% per annum during 1983-85 as well as by creating the necessary infrastructure for rapid economic development thereafter.

IV. Research Institutions in Maldives

Unfortunately, there are hardly any research institutions as such in Maldives. This is mainly because of the fact that the level of educational attainments in Maldives is very low. According to the 1977 census, the total number of persons with secondary school qualifications was 1246; those at the pre-university stage, the number was 141 and those with University degrees only 56. While the number of persons at various levels of educational attainments, including University graduates, has gone up since 1977, there continues to be an acute shortage of qualified doctors, teachers, administrators, financial managers and experts in fields like fisheries, agriculture, tourism etc. This would imply that at least in the next few years, Maldives would have to depend to a considerable extent on foreign specialists and experts in its research and development activities.

The Ministry of Planning and Development which is entrusted with the responsibility of evolving short-term, medium term as well as long term perspective plans for development of Maldives is already seized of the need to encourage research and development efforts in areas of high priority like fisheries, health and sanitation and science and technology. It is recognized that during the next three to four years, apart from certain basic infrastructural development activities, it would be desirable to simultaneously take up some research schemes particularly in the field of fisheries, health and sanitation and alternative energy resources development. The financial allocation for these research schemes is not expected to be large; at the same time, these would be important inputs for the medium-term and longterm development targets. It is hoped that international institutions and agencies will help the concerned authorities in Maldives in taking up these schemes on an urgent basis.

V. Maldivian Government Procedures for receipt of grant funds from IDRC

The procedure regarding receipt of foreign aid by Maldives is broadly as follows:—

(i) The administrative ministry in the Government of Maldives prepares a specific proposal for which foreign aid is required from a particular country/institution. Before the project proposal is finalised, the administrative Ministry may hold technical level discussions with the aid giving country/ institution.

(ii) This proposal is then forwarded to the President's Office for initial scrutiny and approval.

(iii) If the President's Office approves of the proposal, in principle, it is referred to the Ministry of Foreign Affairs for further processing. At present, Mr. Mohammed Shareef, Senior Under Secretary in the Ministry of Foreign Affairs is incharge of External Resources Section and coordinates all foreign aid matters.

(iv) The formal request for foreign aid is then transmitted by the Ministry of Foreign Affairs to the concerned foreign government/institution.

The above procedure will be equally applicable for receipt of grant funds from IDRC. If assistance is required for a project, say, in the health sector, the Department of Health would prepare the project proposal and forward it to the President's Office for formal approval. Only after the President's Office has conveyed its 'no objection', will it be forwarded to the Ministry of Foreign Affairs who, in turn, will pass it on to IDRC for consideration. After the IDRC has approved of the proposal, grant funds would be made available to the Ministry of Foreign Affairs.

Discussions in the Ministry of Planning and Development on the procedure outlined above indicate that the entire procedure of obtaining internal clearances should normally not take long. Even if some changes are suggested by President's Office in respect of any project proposal, this could be taken care of by the administrative ministry in a short period. If some changes or modifications are suggested by IDRC, these could be considered by the administrative Ministry. The proposal, as modified, will however need fresh approval of President's Office.

VI. IDRC and Research Projects in Maldives

Even though there are no research institutions as such in Maldives, there are certain critical areas where research needs to be undertaken on an urgent basis. These areas, which fall within the research priorities of IDRC, are fisheries, health and sanitation and alternative energy resources development. As a result of discussions with Mr. Mohammed Shareef, Senior Under Secretary in the Ministry of Foreign Affairs, Mr. Hassan Maniku Maizan, Fisheries Development Officer and H.E. Mr. Abdul Sattar Moosadidi, Minister of Fisheries, it has been possible to identify two research projects in the fisheries sector. These are:-

(i) To collect and identify economically important species of fish in the Maldives territorial waters; and

(ii) Identification of bait-fish and its seasonal variation for pole and line fisheries.

Details of these projects are given in Annex I. The estimated cost on the first project is $ 380,000 and on the second US $ 200,000.

As regards projects in the health sector, discussions were held with the Director of Health Services in the Government of Maldives, Dr. A. Samad and with Dr. R.R. Arora who is WHO's Programme Coordinator and Representative stationed in Male. WHO is already doing useful work in Male. While WHO would like to undertake some more projects, it appears that they have certain financial constraints. Two projects in the health sector which could be considered by IDRC are:—

(i) To determine techniques with a view to reducing incidence of intestinal parasites to acceptable levels in Maldives.

(ii) Research project on Filaria control in Maldives.

If the above two projects, on detailed examination, are approved by IDRC, their execution could be entrusted to WHO, provided the Government of Maldives so agree.

Details of these two projects are given in Annex II.

Another project in the health sector which could be considered by IDRC relates to a study which needs to be undertaken with a view to evolving the best method of chlorination of water so as to ensure that public gets safe drinking water. The project needs to be discussed with Dr. A. Samad, Director of Health Services as well as with Mr. Abdul Majeed Mahir, Manager, Maldives Water and Sanitation Authority. A brief write-up of this project is given at Annex III.

One more sector in which some basic research is required relates to development of alternative energy sources. Large possibilities exist for development of energy through strong tides, winds and sun. This is particularly important for the atolls. While research in this area is not as urgent as in the case of fisheries and health and sanitation, it may be desirable to undertake specific studies in the alternative energy sources development in the next two or three years.

IDRC is yet to make its entry into Maldives. Although it is a small country with a population of about 160,000, there are certain areas in fisheries and health sector in which useful work can be started immediately. Perhaps, a team of IDRC experts in the field of fisheries and health sciences could visit Maldives and hold technical discussions with the authorities concerned in the Department of Fisheries and the Department of Health. Subject to IDRC satisfying themselves in regard to the need for undertaking some of the research projects, a begining could possibly be made in 1983 itself.

ANNEX I.

Research Projects in the fisheries sector proposed for consideration by IDRC.

1. To collect and identify economically important species of fish in the Maldives territorial waters.

Objectives:

To provide sufficient information on economically important species of fish to form the basis for an exploitation plan of these resources.

Summary of research activities

This research programme will be conducted for a period of 2 years. The collection of fish species of economic importance should generally cover a complete annual cycle throughout the region. At least 10 - 20 trips are required, each taking 2 weeks to a month.

The research will be conducted by utilizing mas-dhoani and vadhu-dhoani boat type. Fish landing sites will be investigated during field trips in identifying and collection of length/weight frequency measurements. During the field trips, all kinds of observations on biology and ecology of economically relevant species will be collected and put into writing; data will also be collected on seasonal migrations, day and night activity, spawning grounds and spawning concentrations. Interviews with island chiefs and fishermen will be conducted in order to obtain information on traditionally important species.

Species collected will be catalogued and preserved at an office suitably accomodated. These species will then be sent to a known Research Centre for cross checking.

Duration of research

2 years

Estimated total cost

380,000 - US dollars.

Expected implementation date

1983

Why a research study of this kind

Maldives is an island nation surrounded by sea, with an economic zone of 200 miles. Fishing is the main economic activity for almost 44% of the labour force. At present the fishing industry is dependant on one species type resources i.e. tuna and tuna like species. Other fishery resources are known to exist; however, the extent and nature of these resources are at present unknown.

Being in an area with a high percentage of fish resources, further expansion of the industry can only be planned on the basis of knowledge of the types of species.

2. Identification and seasonal variation in Baitfish for pole and line fisheries.

Research objectives

To provide the Ministry of Fisheries, Government of Maldives with precise information on the various types of baitfish used, their seasonal variations and their affinity in schools of tuna in order to formulate a programme for baitfish culture.

Justification and benefits

Tuna fisheries is the most important type of fisheries carried out in the Maldives. Tuna fisheries based on pole and line catching method heavily relies on live baitfish in order to lure the schools. Their abundance and distribution have not been identified and these have had great impact on the catch in the recent years. Fishermen have to spend considerable amount of time in catching bait. By providing them with the information collected by this research activity, a lot of their time and efforts will be saved thus reducing fuel costs and time.

Research summary

This research will be carried out over a period of 1½ years throughout the region.

(The activities will be very much similar to the activities described in species identification research already described). Apart from these activities, possible sites for culture of baitfish will be identified and these areas will be visited and assessed for their potential for production.

Two Maldivians will be sent for 6 months training overseas in baitfish culture techniques on completion of the research.

Estimated total cost

200,000 US dollars. —

ANNEX II

Projects in the Health and Sanitation Sector proposed for consideration by IDRC

1. Intestinal parasite control research proposal

More than 65% of children aged between 0-5 years are more than 2 Standard Deviations from the mean weight—for—height. There is little doubt that heavy infestations with intestinal parasites contribute considerably towards this intolerable situtation. However, to date, no studies have been carried out; thus the incidence of intestinal parasites on the population resident on the islands is an unknown quantity. Observations parasite infestation is likely to be in excess of 70%.

Overall objective

To determine the feasability cost and techniques to be used to reduce the incidence of intestinal parasites to acceptable levels, throughout Maldive Islands, by conducting a survey to be carried out in three islands in Male Atoll.

Approaches

In general the approaches to be used will be as follows:

—Conduction of surveys, throughout the study period, to determine both the parasite infestation rate and the nutritional state of children in the target population.

—Preparation and introduction of relevant health eduction methods designed to improve sanitary conditions when used in conjunction with a programme for the construction of community latrines.

—Following the initial survey the implementation of a mass drug administration programme designed to rapidly reduce the incidence of intestinal parasites in the community.

Budget

	(In US Dollars)
Supplies and equipment	
—Laboratory component	15,000
—Drugs	5,000
—Health Education materials	4,000
Local subsidy	
—Food allowance for field staff	3,000
—Overduty payments	2,000
—Transportation	12,000

Note:— The staff employed on this activity will be the regular staff employed by the Government of Maldives.

Construction	
--Construction of community latrines if not already provided	10,000

2. Research project on Filaria in the Maldives

Filariasis is one of the major Parasitic diseases and can be still found in the Maldives.

The incidence of Filaria in the Maldives ranges from 0.3% to 8.2% with some atolls more affected than others.

The major vector to Filaria in the Maldives is a culicine mosquito of the species C. quinquefasciatus (ex fatigans) and is present in every island of the Republic. It can breed in any type of water especially polluted and dirty water.

Main control measures used so far were in the form of drug treatment to positive cases and by larviciding carried out in Male only.

Objectives

The main objective of the Research project would be directed towards study of effective methods for control.

Other objectives could be in respect of studies related to the vector and the parasite.

Activities involved

Main work in connection with this research would involve the following activities:

i) Parasitological Surveys
ii) Entomological Surveys
iii) Serological Surveys
iv) Spraying operations

Personnel or manpower needed:

The manpower needed for such research would be of the following categories:

i) Qualified Scientist
ii) Project Officer

iii) Microscopists
iv) Field Workers
v) Spraymen
vi) Clerks

5. Duration Period:

It is estimated that if all studies are to be done on such a research project, at least four years would be needed to complete, to the final evaluation stage.

6. Funds and Estimated Costs:

The approximate estimated costs to cover all aspects of such project would be nearly $ 200,000, including the services of a qualified scientist for about eight months, hire charges of dhoani, daily local subsidies and necessary supplies and equipment.

ANNEX III

3. Research study required on Water Sector

Diarrhoeal and bowel diseases are very frequent in Maldives. These diseases are often caused by drinking water and improper sanitation. Generally these diseases are called water borne diseases.

It has been found in Male that the ground water is heavily polluted with human excreta. Out of 10 wells examined in Male by Binnies, it has been found that 9 wells contained total coliform which shows pollution. The public drinking water wells are chlorinated regularly and during an epidemic it is advised to chlorinate all the wells including the wells that are used for bathing and ablution purposes. It is a problem for Maldives to maintain the residual chlorine due to withdrawal of chlorinated water in the well. It is therefore required to study the best method of chlorination in order to ensure that the public gets safe water all the time. Majority of the people however are reluctant to chlorinate their wells inspite of health education through mass media.

There are still some doubts whether the diseases are spread only through water. It might be spread by flies or by other means. Hence a research study is required to identify the probable causes for spread of diseases so that necessary preventive measures could be taken in time. It is also necessary to study whether the diseases are spread with regard to rainy season or in dry periods.

Maldives have a plan to construct rain water tanks to meet the demand of drinking water of the entire population by the year 1990. Rain water is to be collected from roofs. A study is required to find out whether the roof catched water is free from pathogenic bacteria or free from health hazard particles; if not, what preventive measures need be undertaken.