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IHAP Raa Atoll Integrated Development Project

END OF PROJECT EVALUATION REPORT

February 1985

A Report to : Government of the Republic of Maldives
United States Agency for International Development
International Human Assistance Programs, Inc.

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LIST OF ABBREVIATIONS

Documents Frequently Referred to in Text:

- | | | |
|--------------------------|---|---|
| Eight Months P.R. | - | Eight Months Progress Report (October, 1982) |
| B.º. | - | Extension Proposal (OPG Extension Proposal, 1984) |
| P.P. | - | Project Proposal (Proposal for the Raa Atoll Integrated Development Project, 1981) |
| QPR | - | Quarterly Progress Report (11 Prepared Since Project Commencement) |

Other Abbreviations

- | | | |
|---------------------------|---|--|
| ABM | - | Assistant Bank Manager (BOM) |
| AHSTC | - | Allied Health Services Training Center |
| AID | - | (United States) Agency for International Development |
| BOM | - | Bank of Maldives |
| "Bonnie and Peter" | - | Bonnie Kittle and Peter Buijs, (Project Managers) |
| CBIRD | - | Community Based Integrated Rural Development |
| CHW | - | Community Health Worker |
| DPH | - | Department of Public Health |
| BDC | - | Education Development Center |
| FAO | - | Food and Agriculture Organization (of the United Nations) |
| FHW | - | Family Health Worker |

GA	- Grant Agreement
GRM	- Government of Republic of Maldives
IDC	- Island Development Committee
IHAP	- International Human Assistance Programs, Inc.
IHAP/Col or CMB	- IHAP/Colombo
IHAP/M	- IHAP/Maldives
IHAP/NY	- IHAP/New York
IHAP/Raa	- IHAP Headquarters in Raa Atoll
IRD	- Integrated Rural Development
MAA	- Ministry of Atolls Administration
MAT	- Maldives Ash Toilet
MCH	- Maternal and Child Health
MM	- Major Medical
MOAG	- Ministry of Agriculture
MOE	- Ministry of Education
MOH	- Ministry of Health
MPA	- Ministry of Provincial Affairs (later MAA)
MWSA	- Maldives Water and Sanitation Authority
NIRD/PCC	- National Integrated Rural Development Project/Program Coordinating Committee
OPG	- Operational Program Grant
PACD	- Project Activity Completion Date

- Abb. 3 -

PDH	-	Packaged Disaster Hospital
PM	-	Project Managers (Bonnie Kittle and Peter Buijs)
PVO	-	Private Voluntary Organization
RADC	-	Raa Atoll Development Committee
RAIDP	-	Raa Atoll Integrated Development Project
RALC/ALC	-	Raa Atoll Loan Committee/ Atoll Loan Committee
RALP/ALP	-	Raa Atoll Loan Program/ Atoll Loan Program
RAPCC	-	Raa Atoll Project Coordinating Committee
RATC/ATC	-	Raa Atoll Training Center/ Atoll Training Center
TBA	-	Traditional Birth Attendant
UNCDF	-	United Nations Capital Development Fund
UNICEF	-	United Nations International Children's Emergency Fund
USAID	-	United States Agency of International Development
USAID/CMB	-	USAID/Colombo
USAID/Col	-	USAID/Colombo
USAID/W	-	USAID/Washington
VSO	-	Voluntary Services Overseas
VTC	-	Vocational Training Center
WHO	-	World Health Organization (of the United Nations)

GLOSSARY

- atoll** - a ring shaped coral island enclosing a lagoon.
- Dhivehi** - the Maldivian language.
- dhoni** - locally constructed wooden vessel (8-14 meters) used for fishing and transport.
- (masdhoni) - large sailing fishing dhoni
- (vadhudhnoi) - small sailing fishing dhoni
- fanditha** - a kind of traditional medicine or charming, used particularly for mental illness and "fevers".
- flush toilet** - a toilet flushed clean with water either directly by hand pouring water from a container, or from a tank with a lever mechanism.
- foolhuma** - traditional birth attendant.
- gifilli** - traditional toilet and washing area. A small unroofed space (usually approx. 3-4 meters square) enclosed by a wall. Where no toilet has been installed, excretion is into a hole dug into the sandy ground with a special digging stick and then covered up. Where the household has a well, it is usually located in the same space.
- hakoem** - traditional medicine doctor.
- katheeb** - traditional island chief.
- kuda katheeb** - assistant island chief.
- Maulloodhu** - a religious/cultural festival held periodically on each island.
- water table** - the surface of ground water trapped between the subsoil and the impermeable rock/coral below.

U.S. ASSISTANCE DATA SUMMARY

1. Project Title : IHAP Raa Integrated Development OPG
2. Project No. : 498-0251
3. Obligating Document : Grant Agreement No. ASB-0251-G-SS-1056-00 between A.I.D. and the International Human Assistance Programs, Inc., (I.H.A.P.).
4. Purpose of Grant : To provide financial support to I.H.A.P. for a three years and two months program of integrated rural development in Raa Atoll.
5. Project Duration : Grant signature : September 23, 1981
Field Operation : February 11, 1982 - April 30, 1985.
6. Grant Funding : OPG - \$ 600,000
7. Host Country Counterpart Agency : Ministry of Atolls Administration.
8. P.V.O. Contractor : International Human Assistance Programs, Inc., 360 Park Avenue South, New York City, 10010

THE EXCHANGE RATE USED THROUGHOUT

THIS REPORT IS

1 U.S. \$ = 7 Maldivian Rufiya (Rf.)

(Official Maldivian exchange rate as of 8 February 1985)

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Several people worked very hard to make our evaluation a success. Bonnie Kittle and Peter Buijs, the Project Managers, housed, fed and entertained us under their own roof. They went far above and beyond the call of duty in providing us with information through both interviews and documents. Their co-operation was absolutely above reproach. Hussain Adam Kaleyfaanu " Ras Kudé", the Katheeb of Rasmaadhoo, and Project Assistant to the Raa Atoll Chief, served as "Escort Officer" on our two island tours. He was instrumental in co-ordinating our itinerary and arranging our meetings with key individuals. Our two interpreters, Mr. Nasheed and Ms. Vasifa Ibrahim, were tireless workers who did everything in their power from cooking to typing to collecting data to explaining island customs, to ensure that our evaluation was a success. Two of our team members depended totally on these interpreters for communication with the islanders, and were always impressed with their grasp of the issues being discussed as well as the ease with which they moved between English and Dhivehi. Mr. Ahmed Sameer, Project Officer, Ministry of Atolls Administration, accompanied the team as the Assistant to Mr. Abdul Hameed, the Maldivian Government Representative. We were fortunate to have someone of his professionalism and insight accompanying us as part of the team. Finally, we want to thank the officials and islanders of Raa Atoll, whose hospitality and co-operation were key factors in the success of our evaluation.

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. Problem and Overview

The Republic of Maldives is an archipelago located 644 km. southwest of Sri Lanka in the Indian Ocean. Its population of approximately 160,000 people live on about 200 of the roughly 1200 islands which make up the country. These islands are widely dispersed over an area 832 km. north to south and 130 km. east to west (land area is 298 sq. km, or less than 0.3% of the total area in the country. See Map Summ. 1). In 1977 it was estimated that only 19 inhabited islands had a population in excess of 1,000. In 1984 approximately one quarter of the population was thought to live in Male, the national capital and administrative center. The World Bank has estimated that the GNP per head in 1978 was \$ 160, the lowest of all "island developing countries" for which IBRD data were available (World Bank, 1980: p 11).

Consistent with its narrow resource base, the country's economy is heavily specialised in two sectors, fishing and tourism - with tourism development concentrated in Male' Atoll. Agricultural production (essentially tree and horticultural crops) is primarily in the hands of women and has been generally neglected by the government. In 1979 it was estimated that food imports accounted for nearly 50 percent of the total value of imports (ibid., p.134). Seventy-five percent of national food consumption (including 99 percent of cereal consumption) was met through imports (ibid., p. 58). Nevertheless, an FAO study conducted over the period 1968-1972 concluded that Maldives could achieve self-sufficiency in food grains even from its limited arable land. But to achieve this aim the Government would need to promote infrastructure, and improve the incentives to producers (ibid., p. 59ff).

Until recently, political power, wealth and social services have been concentrated in the national capital. At least until 1977 access to formal schooling was almost

However, since the late 1970s the national government has expressed the desire to narrow the social and economic gap between Malé and the Atolls. The IHAP Raa Atoll Integrated Rural Development Project was adopted as a measure to complement the supplement the Government efforts to improve access to social services and income generating activities in the atolls outside Malé. It was implemented in Raa Atoll, comprising approximately 90 islands located 161 km. northwest of Malé. The atoll has an estimated population of 11,148 (as of 31 December 1984) on 16 inhabited islands (See Map Summ. 2).

B. Project Goal, Purposes, Objectives and Strategy

The goal of the project is to improve the standard of living of people living in Raa Atoll. This goal is to be achieved through activities in health, nutrition, education and income generation. Activities in agriculture are intended to contribute to income generation and improved health and nutrition. Underlying the activities in these areas is an approach based on stimulating community participation in decision making regarding development initiatives. Although the inhabitants of Raa Atoll are identified as the direct beneficiaries of the project, it is intended that the lessons learned in Raa Atoll will have a wider impact on development strategy throughout the Republic of Maldives (see Table Summ. 1).

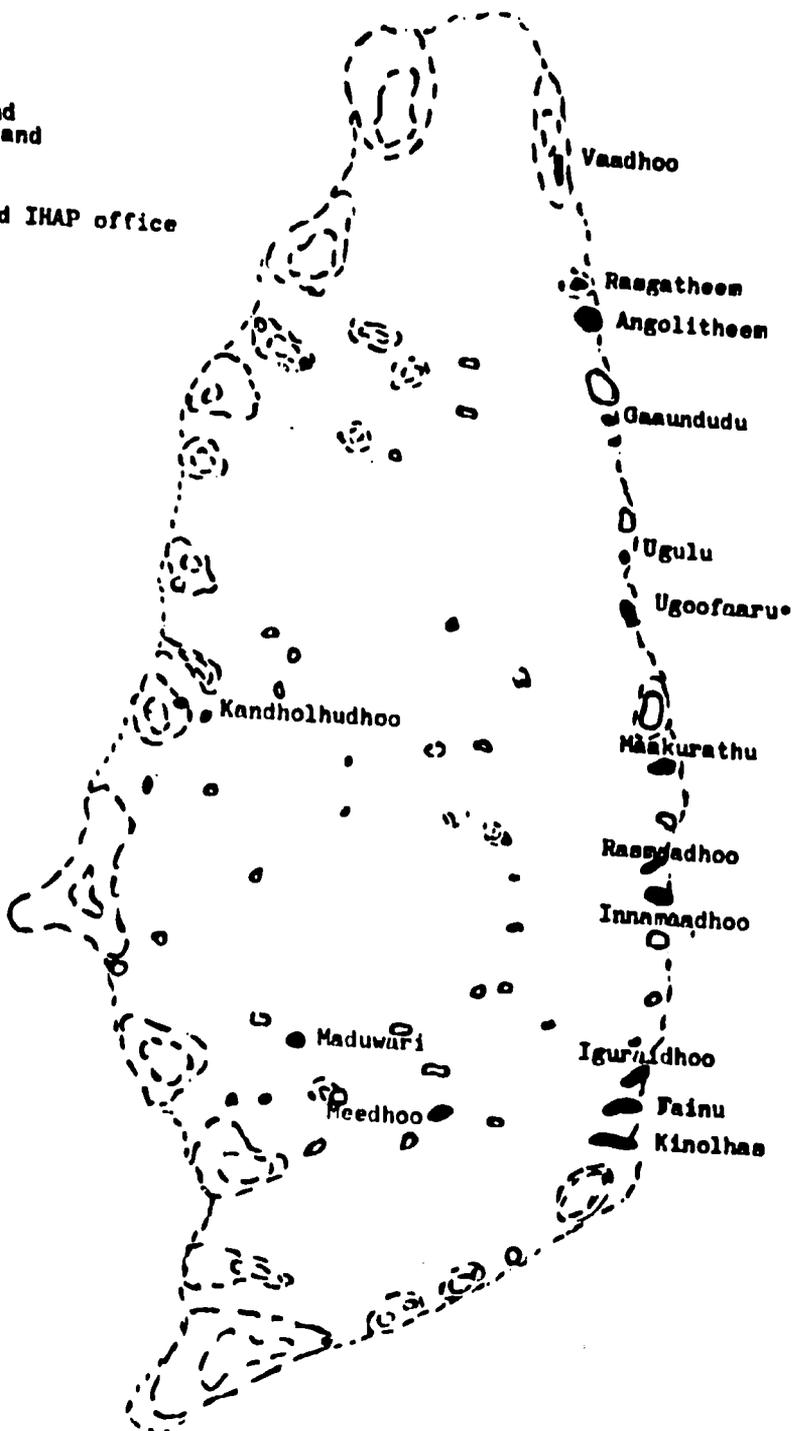
C. Purpose of the Evaluation

This is the report of the end-of-project evaluation for this project. The purpose of the evaluation was to determine the success of the project in meeting its various targets and to analyse the reasons for this level of performance. A tripartite mid-term evaluation for this project was completed in September 1985. In the execution of the final evaluation the following questions were posed and answered:

RAA ATOLL
scale 1:292000

Alifushi

- inhabited island
- uninhabited island
- reef
- edge of atoll
- Atoll office and IHAP office



Improved Standard of Living of People Living in the Atolls

Goal	Improved satisfaction of basic needs - shelter, clothing, health, nutrition, decision-making					
	INCOME	HEALTH	NUTRITION	EDUCATION	COMMUNITY PARTICIPATION IN DEVELOPMENT	DEVELOPMENT STRATEGY
PURPOSE	- Establishment of income generating activities	- Improved water supply - Improved health services - Improved health & hygiene habits	- Improved access to food - Improved food habits	- Improved level of education	- Improved problem identification - knowledge of range of solutions & ability to act on knowledge	- determination of effectiveness CBIRD approach.
OUTPUT	- Income generating & development-oriented use of productive resources in Raa Atoll	- Improved physical support services - Hospital - Latrines - Water tanks - Improved quality of health workers	<u>Improved Agricultural Output</u> - reduction of pest loss from rats & bats - for coconuts & fruit trees - improved output from home gardens - reforestation - goats and poultry	- improved structures - better trained teachers - improved access to books and teaching aids	- better trained Atoll leaders - regular & effective decisions taken & acted upon by island com. groups development activities undertaken, completed, operation & maintenance through guidance of comm. group	- monitoring and evaluation of project activities & interactions
INPUT (3)	<u>Support Services</u> - Loan Program to support borrowers with enterprise identification & evaluation & capital - Staff operating expenses - Supervision - Capital	- Construction and maintenance of - Hospitals - Latrines - Water tanks - qualified health staff	- rat & bat control activities - community interest in home gardens - tree planting & marking - livestock husbandry activities	- Construction & maintenance of schools - qualified teachers - books & teaching aids	- community meetings - liaison with govt. ministries	- liaison with government ministries
INPUT (2) TRAINING	- Loan officers & supervisors	- health staff - community workers - community (specifications & maintenance)	- community - extension workers	- construction workers - teachers - community		
INPUT (1)	- IHAP: Staff - USAID: operating expenses - Advice, capital - GRM, BOM: staff	IHAP: Staff USAID: operating expenses, capital GRM: staff Community: labor, materials	IHAP: Staff USAID: operating expenses & capital GRM: staff Community: labor, materials	IHAP: Staff USAID: operating expenses, capital GRM: staff Community: labor & materials	IHAP: Staff USAID: operating expenses GRM: staff, admin. & logistics Community: time, community organization	- IHAP: Staff admin. & logistics - USAID: advice & GRM: advice & Community: advice & support

GENERAL

ASSUMPTIONS

1. Government/institutional interest in and understanding of CBIRD approach exists.
2. Availability of Government/community participants qualified for and interested in training offered.
3. Government staff qualified, available and with good morale to provide technical advice at all levels.
4. Community willing to participate in CBIRD activities.
5. CBIRD approach is cost-effective.
6. Benefits of Raa Experience spread to other Atolls.

INCOME GENERATION

1. Existence of institutional willingness and legal provisions to support an Atoll loan program outside Male' Atoll
2. Price structure encourages production.
3. Marketing structure operates regularly and reliably.
4. Effective demand exists for Raa Atoll products and services.

1. What did the original project proposal (P.P.) and the extension proposal (E.P.) say about each activity? Were the inputs, outputs, and purposes clearly stated and understood by all relevant parties?
2. How was the project implemented? Were the expected inputs supplied? What activities were implemented? What problems were encountered? Were the Project Managers justified in the decisions they made and actions they took?.
3. What has been the impact of the project? On which beneficiaries? By what criteria can the project be considered a success or a failure?
4. What are the future prospects for sustaining the activities and goals of the project after the project managers are gone? What actions will the island communities/Government of the Republic of Maldives (GRM) have to take to ensure that the activities initiated by the project will be self-sustaining?

The end of project evaluation was begun on 16 January 1985. It was undertaken by a tripartite team composed of Dr. Gladys A. Nott (representing USAID), Dr. Reid Whitlock (representing IHAP) and Mr. Abdul Hameed (Senior Under Secretary, Ministry of Atolls Administration, (representing GRM). The team was accompanied by Mr. Ahmed Sameer (Project Officer, Ministry of Atolls Administration) and by two interpreters specially-contracted for the evaluation.

After 3 days briefing in Colombo the team spent a total of six days in Male and 11 days in Raa Atoll (excluding travel days). Meetings with high level ministry officials were held on arrival in Male' and before departure for Colombo. While in Raa Atoll, seven days were spent visiting all 16 inhabited islands and four days were spent in Ugoofaaru (where the

project managers have been based) reviewing files, interviewing the project managers and working on the draft report. The team required an additional week (6½ days) in Colombo, for debriefing and final report drafting plus 7 days for editing, typing and compiling the completed document.

In order to make the best use of limited time, after discussing the logic of the project, agreeing on an approach to the evaluation, and drafting an outline for the report, interviewing responsibilities for specific project activities (health, education, agriculture, income generation, Community Based Integrated Rural Development (CBIRD) and overall project strategy/project logic) were distributed among the team members. The team met frequently to exchange experiences and test hypotheses. Writing began midway through the atoll trip and continued back in Male' and Colombo.

D. Findings

1. The original project proposal was over-ambitious, vague about the meaning and implications of "self-help" development, and gave inadequate guidance regarding the priorities and sequencing of project activities. The logic of the project and the linkages from inputs through to goals were inadequately articulated.
2. The project managers took the correct approach to working with an inadequate project document : first undertaking a baseline survey then discussing and establishing development priorities with the islanders and finally clearly stating their own interpretation of the project proposal in their first quarterly report. In this quarterly report they explicitly stated their view of the importance of training and working with community organizations to strengthen skills in problem identification and decision making.
3. Out of the range of activities referred to in the project

proposal the project managers have dedicated the greatest proportion of their time to health (about 60% of the time of each of the managers). The promotion of community decision making through meetings and school construction (the priority area specified in 11 out of 16 islands) absorbed 15% of the time of each manager. The establishment of the loan programme absorbed another 15% of the time of each manager. Agriculture, meetings and general administration absorbed the remaining 10% of project managers' time.

Project Managers' Estimated Time Allocation By Project Activity

	<u>Percent of Time</u> ¹
Health - Hospital	60%
- Water tanks	
- Latrines	
- Health Worker training	
Education - Schools, Atoll Training Centre	15%
- Participation promotion	
- Other formal training	
Loan Program - Establishment	15%
- Training loan officers	
- Application evaluation	
Agriculture and General Administration	<u>10%</u>
<u>TOTAL</u>	<u>100%</u>

-
1. Project managers' estimate of time for administration and management (approximately 40%) and travel (5%) distributed pro rata among other activities. General project development (10% of one manager's time) was included with Education. "Strategic thinking", meetings, surveys, and other miscellaneous activities included with Agriculture.

4. The project managers' allocation of their time and energies was a strategic and tactical choice which also reflected their greater strength in engineering and health as compared with agriculture and economics.

5. The managers responded to the government's clear wish for the construction of the highly visible hospital. This effort absorbed more than half of one manager's time. At the same time, tank construction represented a clear desire on the part of islanders, conformed to the government health target for increased island access to safe drinking water, and provided an avenue for directly involving island committees in the planning of a community development activity. The patient process of awareness raising combined with design appreciation for form as well as function has resulted in a measurable, significant change in defecation habits, demonstrated in the increasing level and rate of adoption of the Maldivian Ash Toilet (MAT). By the end of the project 39 MAT's will have been constructed, 64 will be under construction and 182 will have been proposed. The project managers have dedicated a great deal of time and effort to improving the skills of construction workers (for the hospital, tanks and latrines), health workers (family health workers and foolhumas) and island committees (in the decision making process associated with school and water tank construction). Baby weighing has been effective as a way to create regular contact between FIWs and mothers, but FIWs are still very weak in their ability to convince the populace to change hygiene and nutrition habits.

6. The construction of schools and assistance in staffing schools with trained teachers has involved the island development committees and the communities and given them a feeling of accomplishment and increased confidence in the principle of self-help which the project managers have been

promoting.

7. The project managers were correct in deferring the creation of a loan program, initially concentrating their efforts on activities which would both address the social infrastructure priorities identified by the islanders while providing the managers with a more intimate understanding of the administrative and social environment within which the loan program would be established.

By the time the IHAP Project comes to a conclusion, loans should have been approved for a total value of \$ 51,000 (the sum budgeted for the loan fund). Approximately 35 applicants will have received credit. Loan repayment commenced in December 1984 and so far there has been a 100% repayment rate for debts which have come due.

8. The promotion of agricultural production in the islands requires a careful and concerted study of the island farming system, including time allocation and the decision making process regarding crop selection, distribution of production between home consumption, gifts and sale by the producers (primarily women). Such a study and the development of an appropriate strategy for agriculture were not undertaken by the project managers - primarily, because the priorities expressed by the islanders (essentially the more vocal men) lay elsewhere, but partly due to the project managers' relative weakness in this area. Unfortunately the weakness in support to agriculture also exists at the national level, where the Ministry of Agriculture is one of the weakest ministries, lacking staff, financial resources and transport facilities to undertake more than modest development programs.

However rat control has been widely accepted in the atoll, with success achieved in 13 out of 16 islands (covering 70% of the atoll population). It has been estimated that coconut losses due to rats have been reduced by 60%.

9. Initial exercises to stimulate women to engage in independent development activities met with little success and were therefore not pursued by the project managers. Their success in this area was hampered by the lack of a female Maldivian assistant (which they tried, but were unable, to recruit), the relative weakness of the National Women's Committee (with its irrelevant leadership training program), and their own inexperience with the challenging task of stimulating women's initiatives in new areas. However, women interviewed in the Islands participated in school building and water tank construction and expressed their satisfaction with the benefits they derived from these activities as well as from baby weighing and traditional birth attendant (Foolhuma) training.

10. The original proposal, while stressing the usefulness of "self-help" as a means of "covering a wide range of needed services" with limited resources, does not specify the means by which "self-help" activity will be stimulated and sustained nor the expected role of the project managers in generating or supporting these activities.

The approach to meetings and discussions used by the project managers faced substantial initial resistance and was considered to be too much talk and not enough action. The objection of some members of the GRM to this approach was documented in the mid-term evaluation where it was implied that the project managers should shorten discussions, be less insistent on written documentation of construction agreements between IHAP and the Islanders, and concentrate on providing whatever materials and technical advice they had to offer.

These objections highlight the contrasting approaches to "self-help" development adopted by GRM and the project managers. While it is too early to tell whether the project managers' approach will meet the expectations of greater

self-sustainability thought to be associated with greater community participation, it can be said that the structures produced by the project were constructed at a lower cost than similar structures built on different principles. ²

	<u>IHAP</u>	<u>Similar Structure</u>
Hospital	\$104,750	\$ 135,000 ^a
School	\$ 6,550 ^u	\$ 8,000 ^d
Water Tank (per m ³)	\$ 28	\$ 537 ^c
Toilet (per seat)	\$ 43	\$ 107 ^b

- a. 18 bed hospital constructed with UNICEF assistance in Seonu Atoll.
- b. Manual "flush" toilet.
- c. MWSA/UNCDF tank, aluminum and fiberglass.
- d. Average UNICEF contribution for "school upgrading".
- e. Total construction cost for larger model school - 70' x 24'. Cost for smaller model (50' x 24') is \$ 4800 (including both IHAP material contribution and island contribution of materials and labour).

11. The project managers have been conscientious, thorough and punctual in their regular reporting, as well as their maintenance of performance records and project files. The quality of their records as well as their willingness to be forthcoming with information and to be critical in discussions of this project has greatly facilitated evaluation of the project. The GRM has also expressed satisfaction with the managers' reporting to and consultation with government officials.

2. See the following tables for details : Hospitals : III.2; Water Tanks : III.7; Toilets : III.11.

12. In general the feed back from GRM, IHAP/New York and USAID/Washington, received by the project managers has been insufficiently focused and not particularly timely. The response to the project managers' initiation of discussions on the CBIRD approach was half-hearted. Discussion and advice regarding the establishment of the loan programme, while useful, was subject to delays which prolonged the period prior to its implementation. Technical support from IHAP/New York was not apparent.

13. The project managers, assisted by the Ministry of Atolls Administration, showed initiative and imagination in dealing with various logistical problems and with a delay in the arrival of funds (end 1984).

B. Project Design and Policy Implications

1. The IHAP Raa Atoll Integrated Development Project has been a worthwhile use of USAID funds. Physical structures were constructed at a cost which compares favourably with similar structures elsewhere in the country, thus indicating cost effectiveness and contributing to the wider availability of services given limited resources.

At the same time, the relatively greater involvement of community members in decision making regarding island-level structures and the attention to use of local materials and locally adapted technologies gives them a greater (although not guaranteed) chance of being maintained and expanded on in the future.

Training of islanders in a range of subjects has complemented government activities. But it has not, and could not have, obviated the need for future follow-up support from the government. The success of the project owed a great deal to the enthusiasm and technical competence of the project

managers. The same proposal under the responsibility of less capable individuals could easily have floundered. However, a more carefully designed project, drawing on the experiences of this project, should be effectively implementable by moderately competent managers.

2. It is too early to make conclusive statements regarding the project's contribution to the achievement of the purposes specified. However, the following results can be anticipated:

a. The improved health physical infrastructure, (water tanks, latrines and the hospital), should contribute to improved water supply, reduced incidence of intestinal diseases and infant mortality, and more effective health care. The means by which these facilities were provided has given them a greater chance of being maintained and extended than would otherwise have been the case. But, as with structures that have not involved the same degree of community involvement, additional technical back-up will be required to reinforce and complement the skills that have been created through the project. The health workers trained through the project will need continued supervision and support to improve their ability to extend knowledge of preventative health measures and nutrition. So far the project impact on improved nutrition has been negligible.

Training of traditional birth attendants (Foolhumas) has been started as a response to the "felt needs" of women in Raa Atoll. It is too early to assess the impact of this new activity, but the recruitment of an experienced and committed Voluntary Services Overseas (VSO) nurse-midwife augurs well for its success in the short-run. Unfortunately the absence of a suitable counterpart from Raa Atoll has made it necessary to recruit someone from a southern Atoll. This could adversely affect continuity in Raa Atoll after the departure of the VSO Volunteer unless the Ministry of Health assigns a trainee from Raa Atoll to the program.

The entire Raa Atoll community stands to benefit from the health related activities of the project.

b. The principle impact in the field of agriculture has been through rat control. The islanders have convincingly stated that they intend to continue to take rat control measures. However, their access to rat poison will depend on the government's support for its importation and distribution. The entire community has benefitted from the rat control program.

The marking of felleable trees on leased islands may contribute to better conservation of wood resources, but the benefits are not immediately visible. The usefulness of this pilot activity will depend on the continuity of tree marking activities.

c. The presence of improved schools staffed by better-trained teachers should contribute to improved quality of education, as well as providing a venue for community meetings and social functions. Members of the community expressed their willingness to undertake the maintenance of the school structures. A great deal remains to be done in up-grading teaching content and techniques, and teachers will need further in-service training in the future.

d. The loan program has provided valuable experience in the provision of credit to the atolls outside Male'. The program is financially viable in the short-run, but its success will depend on effective supervision by the Bank of Maldives (BOM).

The long-term viability of the loan program in the islands and the access of a wider socio-economic cross section of the community to credit will depend on careful selection and supervision of credit recipients and discipline in loan recovery. The future viability of the program will be greatly

improved if market rates of interest are charged and the capital fund is increased.

So far it would appear that the program is disproportionately benefitting the wealthier and more influential members of the island community. The wider dissemination of funds will require active promotion and technical assistance to less confident and experienced borrowers. This, in turn, will require that adequate funds will be allocated by the BOM for supervision of loan officers (at least Rf. 8,640 (\$ 1,234) compared with an estimated Rf. 8,886 which the BOM will receive from the Raa Atoll Loan Program). It will also require that when receiving loan applications the Raa Atoll Loan Committee will adhere to the spirit as well as the letter of the loan agreement.

e. The Government of Republic of Maldives (GRM) has expressed its approval of the IHAP project both in interviews with senior government officials and through acceptance of two similar projects to be implemented by Save The Children (in the north of the country) and by Redd Barna (in the south).

In addition, some aspects of the managers' "CBIRD" approach have been adopted in the form of offering written contracts for assistance in school construction on islands outside Raa Atoll.

However, it is clear that ambivalence regarding the meaning and usefulness of the CBIRD philosophy persists in government circles.

At the same time, while Island Development Committees virtually unanimously expressed their appreciation of the lessons learned and physical benefits derived from the project managers' assistance, a deeply instilled grasp of the principles of community leadership and decision making was

not, and in three years, could not, be achieved. Neither did the exposure to these principles extend beyond the relatively small number of individuals who have belonged to the Island Development Committees.

It can nevertheless be concluded that the approach to self-help development which was selected by the project managers was the most suitable one within the Maldivian context. While working through the existing institutions they attempted to introduce new ways of thinking about meeting community needs using locally available resources. After three years all that can be realistically expected is that seeds have been sown. Some germination has begun to take place, but whether a spirit of initiative will thrive will depend to a great extent on how it is nurtured by the Government of Maldives.

F. Recommendations

The IHAP project has represented a significant investment in the human and physical capital resources in Raa Atoll. The approach used in this project has aimed to minimize both the investment and operating costs of the activities undertaken. But as with all investments, the continued viability will depend on both the presence of a political will to support the principles of the investment and on the allocation of a minimum critical amount of follow-up resources. It is therefore essential that the government and the island communities specifically earmark budgetary resources and adopt policies as recommended below:

1. Future activities for the support of agriculture should include a careful study of the farming system and women's multiple roles in and out of agriculture. A qualified agricultural extension agent skilled in providing advice to women should be assigned to Raa Atoll. The agent should have the responsibility

of developing the agricultural potential of the Atoll through technical assistance and raising awareness regarding the income and nutrition benefits to be derived from agriculture.

2. Allied Health should establish a program of annual refresher training for FHW's and Foolhumas to be implemented at the Raa Atoll Training Centre. Training should involve a period of "internship" at the Regional Hospital.
3. The Health launch must be used for Atoll transport and the resident doctor should resume regular rounds of islands to support FHW's. A rotation schedule should be established so that each island is visited at least once in every 2 months.
4. Ministry of Health should assign a trainee from Raa Atoll to work with the VSO nurse-midwife and her Maldivian counterpart on the foolhuma training programme. This assignment will increase the chances of continuity in the support for foolhumas in Raa Atoll after the departure of the VSO volunteer.
5. On every island where there are public water tanks a member of the community should be designated as "water manager" with responsibility for valves, taps, gutter and tank cleaning, tank painting and water distribution. This should be a paid position supported through community levy.
6. MWSA should significantly increase the number of MAT's it introduces to each island in its test marketing scheme. (the present plans are for 1 unit on one island in each of 5 atolls in 1985) to 1 for every 50 of population in each target island.

7. The MWSA (for tanks and latrines), Ministry of Health (for the Hospital) and Ministry of Education (for schools) should arrange for semi-annual tours by an engineer to monitor the maintenance of structures and advise the Island Development Committees on the maintenance work required.
8. The Educational Development Centre should provide all teachers in Raa Atoll with at least an annual short course on improved curriculum and teaching methods for Atoll schools.
9. The Bank of Maldives should make a budgetary commitment of at least Rf. 8,640 for supervision of the Loan Officers working for the Raa Atoll Loan Program.
10. The full market rate should be charged on loans.
11. The capital in the loan fund should be increased to Rf. 1,000,000 through contributions of Rf. 350,000 each from BOM and GRM.
12. The Atoll Loan Committee must adhere to the spirit as well as the letter of the tripartite loan agreement and ensure that funds reach the less wealthy members of the community.
13. The BOM supervising officer for the RALP should assist with investment identification and feasibility studies working with potential loan recipients in the fields of agriculture (working directly with women producers) and fisheries.
14. The MAA and BOM should consider how Raa fits into future possible loan programmes (including new Atoll BOM bank branches; World Bank loan project under

negotiation).

15. If the Island Chiefs and Development Committee members are to truly become active promoters of community services for the island public, they will need to be exposed to new ideas regarding ways of improving the welfare of their islands. At the same time technical advice on improved construction methods and maintenance of community services will be needed.
16. As part of its regular statistical recording, and to contribute to the long-term monitoring and evaluation of development in Raa Atoll, GRM should collect data on water quality in a sample of wells and water tanks, infant and child morbidity and mortality, morbidity and mortality by age and sex associated with diarrhoea, and maternal mortality before and during child-birth, in addition to the statistical information now being recorded by the Island Offices.

It has been stressed that the project represents an important initial investment. The fruits of the investment will only become evident, given adequate follow-up, in the years to come. The most important lessons regarding the real impact of the project are therefore still to be learned. These lessons will be highly beneficial both to the government of Maldives, in the shaping of national policy, and to USAID, in developing future assistance activities both in Maldives and in the region. It is therefore recommended that:

17. USAID earmark funds for a follow-up evaluation of the longer term impact of the IIAF project in Raa Atoll. This follow-up evaluation should take place

three years after project completion and should have a budget of \$ 34,200 (see Appendix ,B.C for details).

1. INTRODUCTION

Project Description

The Raa Atoll Integrated Development Project exists to (1) contribute to the national goal of improved standard of living in the atolls by implementing activities in the areas of education, health, agriculture and income generation (2) assist local organisations in becoming self-sustaining development promoting organisations (3) serve as a pilot project in determining the effectiveness of the community based integrated development approach in the Maldives. (B.P.,pp.3-4)

The project, which began field operation on 9 February, 1982, was originally designed to have a 2½ year life. This was extended by 6 months in 1984, to 9 February, 1985, and by an additional 11 weeks, to 30 April, 1985, in February 1985. The project is implemented by IHAP in collaboration with several cooperating Ministries of the GRM. The Ministry of Atolls Administration is IHAP's direct counterpart organisation in the government. The major funding contributors are IHAP, USAID, GRM and UNICEF. The budget for the project is \$ 600,000 (OPG budget only).

The Maldives

The Republic of Maldives (see Map Exec. 1) is an archipelago consisting of nearly 1,200 islands, stretching over 517 miles from north to south in the Indian Ocean. Its capital island, Malé, centrally located in the archipelago, is approximately 400 miles south of the southern most points in both India and Sri Lanka. The country is divided into 19 administrative units called atolls.¹

1. A Dhivehi (Maldivian) word meaning "a ring shaped coral island with a reef surrounding a lagoon", it has come into use in the english language virtually unchanged.

The 202 inhabited islands are spread throughout these atolls.

The Republic of Maldives is an Islamic State. All citizens are professing Moslems. Though colonized briefly by the Portuguese in the mid-16th Century (1558-73), the Maldives has been an independent nation continuously since that time. The population is estimated to be 160,000, 1/4th of whom live on the capital island. The remaining 3/4ths of the population live throughout the inhabited islands, each island averaging 100 acres in area and supporting an average population of 600. The islanders have traditionally depended on fishing and a limited array of island crops (primarily coconut and breadfruit) to eke out a subsistence living. Due to its remoteness, the country was overlooked by donor and assistance-providing organizations until the mid-1970's.

Early development efforts were concentrated in Malé and have contributed to the rapid growth of the capital in all sectors. Tourism and fish exports are the only significant net providers of foreign exchange to the government. The country has been accelerating the rate at which its imports exceed its exports at an unsustainable pace. The central government has very firm control throughout the archipelago in spite of the transport barriers the long distances and open expanses of water between communities create. The President, elected in 1978, has stated his intention to improve the standard of living of the inhabitants of the island and atolls beyond Male. As a result, development projects geared for the atolls have been initiated.

Raa Atoll

Located approximately 100 miles northwest of Malé (see Map Summ. 2). Raa Atoll consists of 16 inhabited and 74 uninhabited islands, extending 43 miles from north to south and 13 miles from east to west. The population is

11,148.² Raa is considered a good fishing atoll and is well known for the skill of its boat builders. With the commencement of the IHAP project, Raa Atoll became the site for the country's first atoll-based integrated development project. Ugoofaaru, the capital island, is also the base for the IHAP project.³

Purpose of the Evaluation

The evaluation assesses the results of the project and determines the project's success in achieving its goals since its inception. The table on page viii in the Executive Summary details and intended outputs, and the purposes and goals they were designed to support. Specifically the evaluation intends to:

- critique the project's conceptualization, the project's execution and the project's impact.
- to make specific recommendations regarding the way the project could have been corrected/improved, and how a future project could be better conceptualized and executed.
- to make comments on the institutional constraints on success of integrated rural development projects like the IHAP/Raa project, proposed by GRM, USAID and IHAP.
- to propose and improve methodology for evaluations of this type of project in the future.

The evaluation will aid the participating parties in determining the effectiveness of the community-based integrated development approach in the Maldives, one of three purposes of the project.

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2. 31 December, 1984 data compiled from island records.
 3. Much of the text of the sections on the Maldives and Raa Atoll are adapted from pp.2-3 of the Extension Proposal.

Members of the Evaluation Team

The Government of the Republic of the Maldives was represented by Mr. Abdul Hameed Ahmed Didi, Senior Under Secretary, Ministry of Atolls Administration. The United States Agency for International Development (USAID) was represented by Dr. Gladys A. Nott. International Human Assistance Programs, Inc. (IHAP) was represented by Dr. Reid B. Whitlock.

Other Evaluations

The only other evaluation of this project was the Mid-Term Tripartite Evaluation of the Raa Atoll Integrated Development Project. It was conducted in the same islands, and involved representatives of the same three participating parties as the present evaluation. It was completed in September 1983.

Logic of Sequencing

The evaluation report begins with a detailed Executive Summary that presents findings, conclusions and recommendations but largely omits the supporting analysis, which appears in the subject area chapters. Following this introduction is a description of the overall methodology of the evaluation. Following this are the chapters devoted to each of the major areas into which the project's activities fall. The order is not significant.

The final text chapter, Critique of the Logic and Philosophy, is less a concluding chapter than a presentation of various important issues which the reader should consider in greater depth when assessing the success of this project or designing other, similar projects. Additional useful information is contained in the appendices which appear at the end of the report.

II. METHODOLOGY

The evaluation was conducted on the basis of an overall methodology, while within that, specific sector methods were applied in each of the project's key subject areas (which correspond to Chapters III through VII of the text). This chapter will only document and describe the overall methodology employed, as the subject chapters each contain references to their particular methods of data gathering and analysis.

Our point of departure was the guidance provided in the two scope of work documents given us by USAID/Colombo. These documents were analyzed for quality, consistency and usefulness. After having weighed the possible value to the readers of advancing with an evaluation on the basis of these documents we decided to redesign the evaluation format to more appropriately reflect the complexity of an integrated project.¹ The IIIAP project encompassed many activities in a range of subject areas with different start dates, synergistic effects and resource requirements. These unfolded in 16 different locations and applied to a diverse cross-section of beneficiaries. Our modifications have retained all the sections that were clear to us. No key questions that the tripartite constituencies wished addressed have been omitted. Priority in analysis was given to responding to the questions posed in the scope of work documents. This approach is consistent with the expectation of the project extension proposal that the evaluation team should be able to assess the results of the project and determine the degree of the project's success (E.P., p.13).

To make this determination, we look first and foremost to the original project proposal. We believe that the

1. See Appendix II.1 "Scope of Work Document", for evidence of the level of incompatibility between the USAID B" standard scope of work document and the scope of work designed by USAID/Colombo especially for this project.

extension proposal is just that, an extension. It is not a revision document. We hold the participating parties and the project managers accountable for the targets and responsibilities specified in the original document unless a later document, signed by all participating parties strikes or alters passages from the original proposal. The extension proposal is acknowledged to be a key document and we will refer to it where doing so sheds light on a particular aspect of the project. The greatest emphasis has been placed on our findings regarding the project's activities, approaches and successes to date. ²

Recommendations to ensure that the greatest possible continued benefit to the inhabitants of Raa Atoll, follow from this emphasis. Where possible we extend our recommendations to the design of similar projects in the future, but thorough examination of these issues was beyond our capacity given time and resource constraints.

Chronology

It is easiest to understand our methodology if we present it as it progressed during the evaluation. At the outset the USAID and IHAP representatives prepared for the trip to the Maldives in Colombo through a background reading of all available material of relevance. This included the Survey of Island Women Report, ³ the World Bank Country Study for the Maldives and all the project-related reports and correspondence that were at their disposal in the IHAP and USAID offices in Colombo. Several meetings were held

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2. One specific approach we used to organize our findings was to show the impact of the activity being discussed on each of the other four subject areas.
 3. Report On The Survey Of Island Women, National Planning Agency, Government of Maldives, Male', February 1980.

with the IHAP/Colombo Resident Representative and with members of the Health and Program offices of USAID/Colombo. The Director of USAID/Colombo had a separate detailed discussion with the USAID and IHAP members of the evaluation team respectively. The USAID and IHAP evaluators worked closely during this period to anticipate potential problems and develop contingency plans to address them. Upon arrival in Malé, the capital of the Republic of Maldives, the IHAP and USAID team members joined with the GRM team member and his assistant, both seconded from the Ministry of Atolls Administration. Together, the team held two days of meetings with high ranking government officials in the cooperating and implementing Ministries. A questionnaire was used in the meetings as an aid to focussing the discussion to ensure the optimum use of the brief time we had available. The questionnaire was incorporated into our interviews, giving us a 100% response rate. We tried tape-recording one of our early meetings, but abandoned this practice as it did not provide an efficient way of referencing specific points in the absence of a transcription of the tape. During the evenings in Malé, the USAID and IHAP representatives hold detailed discussions with Peter Buljs, one of the two project managers. Late nights were spent creating a logical framework for the project. A logical framework is a conceptualization tool used frequently in USAID project planning. Its format is represented by the following matrix :

TABLE II.1: LOGICAL FRAMEWORK MATRIX

	Listing	Indicator	Means of Verification	Assumptions
Goals				
Purposes/ Objectives				
Outputs				
Inputs				

The exercise of rigorously applying this matrix was an exhausting but useful investment of time as it provided us with a greatly enhanced appreciation for the project's complexity and some of the problems of focus and consistency that accompany such complexity. We found diminishing returns resulting from our attempts to force every input and output of the project through the sixteen grids of the matrix. We recommend that the groupings of activities be considered together (as we have done in chapter I, Table Summ. 1) This will provide a general appreciation for the logic of the project without the risk of either preparer or reader becoming lost in detail.

From Male the team travelled by boat to Ugoofaaru, the Raa Atoll capital. One and a half days were spent in constant discussions with the project managers and in examination of the records of the project, which are maintained at the IHAP office on the island. In addition to examination of newsletters, lesson plans, correspondence and other material that had not been available to them in Colombo or Male, the team regularly fed the project managers requests for specific data. They were most helpful and thorough in their cooperation in this regard, and added significantly to the team's effectiveness, both in time freed for other work and in the quality and clarity of presentation of the data they made available to us.

We left Ugoofaaru for our first island tour, covering the six islands north of our base in the atoll capital. We divided the responsibilities at this point, so that on each island we visited, the same team member would be evaluating the same kinds of issues. One took income generation and CBIRD, one, health, and one, education and agriculture. The two interpreters, hired by the project managers, joined us in Male and Ugoofaaru respectively and were utilized extensively once the island visits began. They provided an interesting contrast to one another: one was female,

totally bilingual, with 10 years of school in Sri Lanka and prior UNICHP staff experience, but with only moderate prior exposure to Maldivian life outside Male. The other, male, was a former Community Health Worker, had been to nearly every island in the country, and was a resident of Baa Atoll, an outer atoll like Raa, about 40 miles to the south. Though his english was weaker than that of his femal counterpart, his contact network in the islands (and ability to make new friends easily), intimate first hand knowledge of the country's health care system and insights into the rural Maldivian culture, made him extremely valuable. Together these two became an important additional resource, without which the evaluation would have been unable to probe into a fraction of the areas it did. The evenings on the northern island tour were spent exchanging ideas in interviews and, when possible, writing. A day and a half in Ugoofaaru followed the northern trip. This time was used to test assumptions and hypotheses developed on the northern trip with the project managers. In addition, the team began writing the drafts of their respective subject chapters at this time. We elcted to begin writing as soon as we had seen enough of the project's activities to make this practical. Including Ugoofaaru, by this time we had visited 7 islands. While in Ugoofaaru the team members revised questionnaires and made note of data they had not been collecting but that their chapter writing was revealing to be necessary. The southern island tour was much like the first, though there was a noticeable refinement in the data gathering and project evaluation techniques. Although the team had made a decision to visit all 16 islands in the interests of thoroughness (and a certain curiosity) the report could have been written with nearly equal detail and insight without visits to the remaining 9 islands. The data quality nevertheless improved as each of us had a better idea which members of the community had the information we sought. More testing of the islanders' skill, know-

ledge and understanding took place as a method of assessment of IHAP's impact on the communities. ⁴

The final return to Ugoofaaru was spent immersed in write-up of the first draft of the project report. One reason for this was that Bonnie Kittle was not able to accompany the team back to Male' and we felt that she should have an opportunity to comment on our findings and recommendations. The second reason was that any postponement of the actual writing would have decreased the number of tripartite days the team would have had to exchange views on the written work, as the IHAP and USAID representatives had to return to Colombo for debriefing and final preparation of the evaluation report. What few short breaks were taken from writing were devoted to further discussions with the project managers and examination of their records.

Our return to Male provided an opportunity for follow-up visits with the government officials we had met with at the outset of the trip. These proved extremely useful as we were in a much better position, based on the knowledge gained during our visit to the atoll to direct our questions to particular problem areas and ascertain the real familiarity of the officials with the project activities for which they had implementing responsibilities. Meetings were also arranged between the IHAP representative and the project's point-of-contact within the Ministry of Foreign Affairs. This meeting was particularly interesting because of the insights provided into conditions in Raa atoll prior to IHAP's arrival (the official was the former Raa Atoll Chief). The IHAP and USAID representatives held one evening meeting with the Resident Representative of Redd Barna, the Norwegian Save the Children organisation. As his organization has

4. And as a way of providing, where possible, a second means of verification of data and observations provided by the project managers.

undertaken a CBIRD project in another outer atoll, the opportunity the meeting provided for them to compare projects was very useful. The itinerary for the evaluation team called for the IHAP and USAID representatives to return to Colombo at too early a date for writing to have been completed prior to their departure. Because of this, some of the content of the final document was neither read nor endorsed by the Maldivian representative to the evaluation team. However, we have tried to minimize any significant divergence in view point by regular discussions throughout the evaluation and by final exchanges, especially designed to ensure accurate reporting of the findings of the two subject areas for which the GRM team member was responsible.

Upon their return to Colombo, the USAID AND IHAP representatives were debriefed by the staff of their respective presentation. As part of her debriefing presentation, the USAID representative prepared a new iteration of the logical framework, (See Table Summ. 1). This framework provides an easy, visual way to place the components of the project in perspective.

The methodology of final document preparation, which was left to the USAID AND IHAP representatives was as follows: all chapters were assigned to one or the other representative for drafting (by mutual agreement)->upon completion, chapters were exchanged, each reading and commenting on the other's chapters (comments were more on matters of content than style so the authors' different modes of expression and presentation will be evident)->chapters were returned to original author for correction->chapters were again exchanged for final audit->document was typed, bound and distributed.

The evaluation took 39 days to complete. (See Table VIII.4 which will discuss in greater detail the length of time allocated for this evaluation, with recommendations for a more realistic schedule).

III. HEALTH

Overview

The health components of the Raa Atoll Project were designed to respond to the Maldivian Government's concerns about the poor health and nutrition status of the population. They include construction of a 12 bed hospital for a four atoll area, construction of rainwater catchment tanks and latrines, creation of an intestinal parasite eradication program, and manpower training (tank, gutter and latrine builders, Community Health Workers, Family Health Workers and foolhumas).

Method

Representatives of the Ministry of Health, Allied Health Services Training Centre and Maldives Water and Sanitation Authority were interviewed in Male'. In the atoll, a routine was established on each island that began with lengthy discussions with the Family Health Worker (FIW).¹ (S)he would give us the name of, and often escort us to the hakeem (traditional medicine doctor), spirit doctor (practitioner of "sanditha" - a kind of traditional medicine or charming used particularly for mental illness and "fevers"), foolhuma (midwife, sometimes government certified, sometimes traditionally trained), water tank builders, gutter makers and latrine builders, mothers with young children, pregnant mothers and on Ugoofaaru, the atoll capital, the doctor, pharmacist, laboratory technician and CHW. Questions were often asked that would test the

1. All FIW's in the atoll were interviewed. Because of this total sampling, percentages appearing later in the chapter that refer to FIWs are based on questions posed to each of the 16 FIWs.

knowledge and understanding of the interviewee. Visual inspection of tanks, latrines, growth monitoring charts, foolhuma birthing kits, dispensary inventory, etc. was made whenever practical. Detailed notes were kept on all the above for later analysis.

Objectives

These activities were all designed to support the project's objective of "improved health and nutritional levels for inhabitants of (an) entire atoll" (P.P.,p.3).² Health and nutritional levels can only be improved by first improving the infrastructure (water tanks, latrines), institutions (hospitals), and personnel (paramedical staff) that provide health and nutrition services.

Setting

The Maldives and Raa Atoll specifically, is a difficult environment in which to attempt activities that support health and nutrition improvement. Fresh water is scarce, being confined to a shallow film floating above a saline water table. This film is easily contaminated by water-borne bacteria that percolate through to the fresh water layer from human waste left untreated at or near the surface. Up to the time of IHAP's involvement, medical facilities in Raa Atoll have been limited to a tiny one-room clinic in the atoll capital, staffed by a single paramedic. Visits to the clinic from the outlying islands of the atoll were hindered by non-availability of timely transport, reluctance of many to be treated by "a stranger", and lack of island-level health workers to identify medical problems, perform first aid and refer islanders in need to the clinic.

2. The degree to which the project's health activities were successful in supporting this objective is summarized in Appendix III.2

Activities

HOSPITAL CONSTRUCTION

The project document called for IHAP to construct and hand over to the Ministry of Health (MOH) a 12 bed hospital (including a laboratory and dispensary). No specific mention was made of who would provide or pay for labour and supervision at the construction site. This omission forced the project managers to divert funds to hospital construction wages from other activity.³ This decision to accept responsibility for payment of construction wages was a sound, though costly one. Had they protested, and attempted to convince one of the other participating parties (such as GRM) to cover these costs, ill-will would have been created early in the project, time would have been consumed in documenting, defending and waiting for decisions on any requests for supplemental funding, rather than being used to start some of the project's other activities, and they would not have been at all certain of raising the additional funds.⁴

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3. Primarily toilets. This amount was refunded with the extension proposal's additional funds.
 4. Other logistical problems should be merely noted here as they did hinder the smooth flow of goods from Male' to Ugoofaaru in the beginning of the construction work on the hospital. Over time, standard operating procedures were established between IHAP and GRM (see Q.P.R.5,p.6) and delays became less frequent.

The hospital was completed and opened in April 1984. The MOH gave its unqualified approval to the level of workmanship, adherence to design specifications and the total expenditure. Though no date for completion was specified in the project document, the project managers informed the MOH in late 1983 that the hospital would be completed by April 1984 and they met this deadline as promised.

The direct impact of the hospital on the goal of improved health is evident in the significant upgrade in health services to the four atoll region of which Raa is a part.⁵ Among the new services provided by the hospital are a laboratory with facilities for a technician to perform routine examinations of blood for hemoglobin, erythrocyte sedimentation rates and cell counts; urine for albumin, sugar and microscopy; stool microscopy and sputum for acid fast bacilli; and a 17 bed hospital (plus 2 cribs) which provides facilities for the performance of minor surgery (that which can be managed with local anasthesia and where blood loss requiring a transfusion is never expected), some obstetric surgery (such as hastening a labour by amniotomy, repair of perineal tears, evacuation of incomplete abortion and manual extraction of retained placenta), and some orthopaedic surgery (such as closed reduction of fractures under narcotic analgesia and debridement of compound fracture wounds with closed reduction). Due to the limited technical equipment in the hospital, many of the above procedures must be performed as emergency surgery.

5. Laviyani, Noon, and Baa are the other three atolls serviced by the regional hospital.

The hospital has made an indirect positive impact on the government's development goals in four ways. It provides tangible evidence to the islanders of the government's commitment to improving health facilities in the atoll. It supplements the hospital network in the atolls being one of four regional hospitals called for in the government's present development plan.⁶ It performs a statistical gathering function of great importance for health policy, resource allocation and program monitoring at the national level. It contributes to the effectiveness of the national health services delivery system by screening patients and referring to the Male' Central Hospital only those who cannot be handled at the regional level, thereby optimally utilizing the country's scarce medical treatment facilities. (See Table III.1).

The hospital has also produced a positive impact on income generation for the islanders of the atoll by creating employment for local labourers during the hospital's construction, by providing ongoing employment to 13 Community Health Aides (all from Raa Atoll), one doctor, two nurse-aids and one pharmacy manager, & by providing business to local shops (primarily for food). It also impacted income generation by providing incentive for one islander to construct an island guest house (the relatives of the patients will be the principal occupants) which should become income-producing in the future.

The hospital has indirectly contributed to CHIRD through

6. Though the hospital was the fourth of four planned, it was the second completed.

Table III.1: Referrals to Male Central Hospital (Apr-Dec 1984)

	<u>Number</u>
General Surgery	
* Acute appendicitis	1
* Bleeding peptic ulcer	2
Uncomplicated hernia	10
Fournier's gangrene	1
Obstetrical	
Placenta previa	1
Obstructed labour	2
Pregnancy with severe anaemia	1
Eclampsia	1
Medical	
Severe anaemia	2
Schizophrenia	1
Myocardial infraction	1
Gynaecological	
Uterine prolapse	3
Primary infertility	3
Neurosurgical	
Subdural haematoma	1
Emergency evacuations	

(source: Dr Razoo, Resident Physician, Raa Atoll Hospital and hospital records)

its mobilization of local labour,⁷ with subsequent skill-transfer in such areas as wiring and water pump installation. These laborers were able to claim some responsibility for the pride felt by the islanders of Ugoofaaru in particular and the atoll in general at the hospital's completion.

The maintenance of the hospital is in the hands of the MOH. It is well constructed and with attention to details of routine maintenance should definitely last its depreciation-rated useful life of 30 year. One potential problem area is the electric water pump. It has already failed at least once requiring repair by one of the project managers. Someone on Ugoofaaru must be trained in its repair and maintenance as soon as possible.

Recommended changes in the hospital are limited to addition of a small operating theatre with necessary support room, the construction of an X-ray theatre (in the short-term, there are plans to utilize the laboratory in this capacity, but this is a less than satisfactory solution for space, shielding, light and dust reasons) and a common room for the off-duty nurses (who will number 8 - 10 at any point in time) at some future date. None are essential at present as operations requiring such a theatre are still a small percentage of all cases treated. As no X-ray equipment as yet exists and the nurses use their bedrooms as gathering places, these recommended changes need not be considered high priorities.

7. Though a CBIRD approach was not implemented for the construction of the hospital, the use of atoll-based labour, working on a project with direct benefits to that labour, would have contributed indirectly to raising CBIRD awareness and to later willingness to attempt CBIRD implementation.

The Raa hospital compares favorably with the UNICEF-funded hospital built in Seenu Atoll, both in total capital outlay and in time required for completion. The following comparative table illustrates this clearly :

Table III.2: Appx. Comparative Costs, Raa vs. Seenu Hospitals

	<u>Raa^a</u>	<u>Seenu^e</u>
Local Materials ^b	\$ 12,000	\$ 5,000 ^f
Imported Materials	\$ 40,000	\$ 39,000 ^g
Labour	\$ 23,000	\$ 64,000
Management ^c	\$ 18,700	N/A ^h
Total	\$ 82,500	\$108,000
Adjustments	\$ 11,000^d	\$ 27,000ⁱ
GRAND TOTALS	\$ 104,750	\$135,000

- a. This is a 17 bed hospital constructed over 14 months with 2 months additional required for follow-up and planning.
- b. Includes inland transport costs.
- c. Calculated at 25% of total salary plus differential over the life of the Raa Atoll project.
- d. Raa hospital adjustments include appx. \$ 2,000 for a generator and appx. \$ 9,000 for furniture, the former an import and the latter local material cost.
- e. This is an 18 bed hospital constructed over 12 months with at least 6 months required for additional planning time. (Perhaps more, as project is still not totally completed).
- f. Low, due in large part to the use of bricks for construction made from cement rather than coral, lime and sand as was done in the Raa Hospital. The cost of this cement is omitted from UNICEF cost data. UNICEF saved on inland transport costs by having its materials transported to Seenu gratis by a US Navy vessel.
- g. Includes freight but does not include the cost of cement, large quantities of which were required for the foundation and perimeter wall.

(Table III.2 continued on page following)

- h. Difficult to calculate but must include frequent Male^o to Seenu return trips by teams of architects and site supervisors. \$ 2,000 will be used as an approximation, including salaries (this will be added in 'adjustments').
- i. Include manager costs and cement costs, generator (estimated cost for 25 KVA appx. \$ 10,000) supplied by UNICEF. Furniture costs (estimate) \$ 9,000.

Due to differences in total construction time, it is useful to calculate average monthly costs. These would be \$ 7,482 for the Raa hospital and \$ 7,500 for the Seenu hospital. In relative terms the Raa project utilized time and money resources more efficiently (by 11.1% and 0.25% respectively), and provided full services to its target community sooner, than the Seenu UNICEF hospital. For the resources spent, if we assume that having regional hospitals of this size⁸ and capability is a reasonable target, the Raa hospital must be deemed a worthwhile and successful contribution to the project's and the GRM's goal of improved health, not just for Raa, but for the entire four-atoll region.

Apart from the physical hospital structure, the management of the hospital requires evaluation.

HOSPITAL MANAGEMENT

Management of the hospital was the responsibility of the MOH ('a regional hospital will be constructed and turned over to the MOH to provide basic health services...')

8. Occupancy rates have been rising since the opening of the hospital (cumulatively totalling 5,723 patients for the 8 months of 1984 operations), and can be expected to continue to do so as health, information and referral improve. (Source : Raa hospital admission register).

P.P.,p.3,Para 2.1). Though no reiteration of this responsibility appears in the extension proposal document (see B.P.,pp.5-6 for the only mention of the hospital at all). Even under the chapter and title 'Conditions Expected At The End Of The Project', pp.8ff, no mention of the hospital is made), the evaluation team could see no benefit to the people of Raa Atoll of a hospital structure in the absence of a sufficient and competent management contribution from the MOH.

Of the tasks outlined in the original project proposal to be performed in the hospital (P.P.,p.5) all are being competently and adequately undertaken (curative services and laboratory services), with the important exception of the preventive maternal and child health (MCH) clinic. As the project proposal makes a specific point of stressing the community medicine orientation of the hospital ' with heavy emphasis on preventive work, particularly maternal and child health' (P.P.,p.5), we examined the reasons for the problems with this particular program. The hospital has attempted to operate a well baby clinic and antenatal clinic but has experienced disappointing results. The resident physician has set aside one day per week for this clinic, but because of transport problems (primarily bad weather and dhoni unavailability, particularly when fishing is good) the critical mass of mothers and children necessary to justify preparing for and holding such a clinic never materialized. The doctor must judge the best allocation of his time for the maximum impact on the health of the community. We support his assessment of the logical impracticality of continuing with the preventive MCH clinic at this time. For the short-term, we recommend that the doctor utilize every possible opportunity to give preventive advice to mothers of sick children and pregnant mothers who come to the hospital for other reasons. Such consultations should include full antenatal coverage to include urine examination and tetanus toxoid administration. For the medium-term,

perhaps a change in the doctor's policy of making Friday (the Maldivian 'day of rest') trips to the islands would be in order. Separated from his family, working under difficult conditions as the only physician in a four atoll area, the doctor is under great and understandable pressure to use this day for rest, rather than exhausting island visits. The mothers and children of the atoll would gain more frequent access to the doctor if his island visits occurred on a day other than Friday, preferably a Monday or Tuesday, to space his absences from the hospital as evenly as possible. The hospital could be left in the hands of the CHW during these absences, and if an emergency arose, all islands are linked by radio and no island in the atoll is more than a 3 1/2 hour sail by motorized dhoni in good weather from the hospital.

One of the specialized functions of the preventive MCH clinic is to provide for child immunization. The text of the project proposal detailing this function was extracted verbatim from One Way To Health For All: The Country Health Programme Of The Maldives (Ministry of Health and WHO, Male: Feb-Mar 1980, Vol. 1,p.34). Unfortunately the source document is unclear on the performance of immunization and the participating parties in the Raa Atoll project did not make any attempt to correct this ambiguity.⁹

9. The troublesome passage reads as follows: 'immunization of all children of the island' (P.P.,p.5 Para.3.1.2.2). Since the passage refers to the responsibilities of regional hospitals, it should substitute word 'region' for 'island'. As it reads presently, the hospital would only be responsible for immunizations on 'the island' of Ugoofaaru. We cannot imagine that this narrow statement of mission was the intent of the passage. In any event, all children are not yet being immunized.

The staffing of the hospital, also a responsibility of MOH has been implemented to better than the expected levels. The project proposal calls for 'one doctor and two nurse aides for the hospital on a rotating basis'. (P.P.,p.6). In fact, the doctor has agreed to accept a 2-year assignment as physician-in-residence, greatly improving the continuity and consistency of the service level the hospital can offer.¹⁰ The permanent local staff for the hospital have been hired as specified (P.P.,p.6).

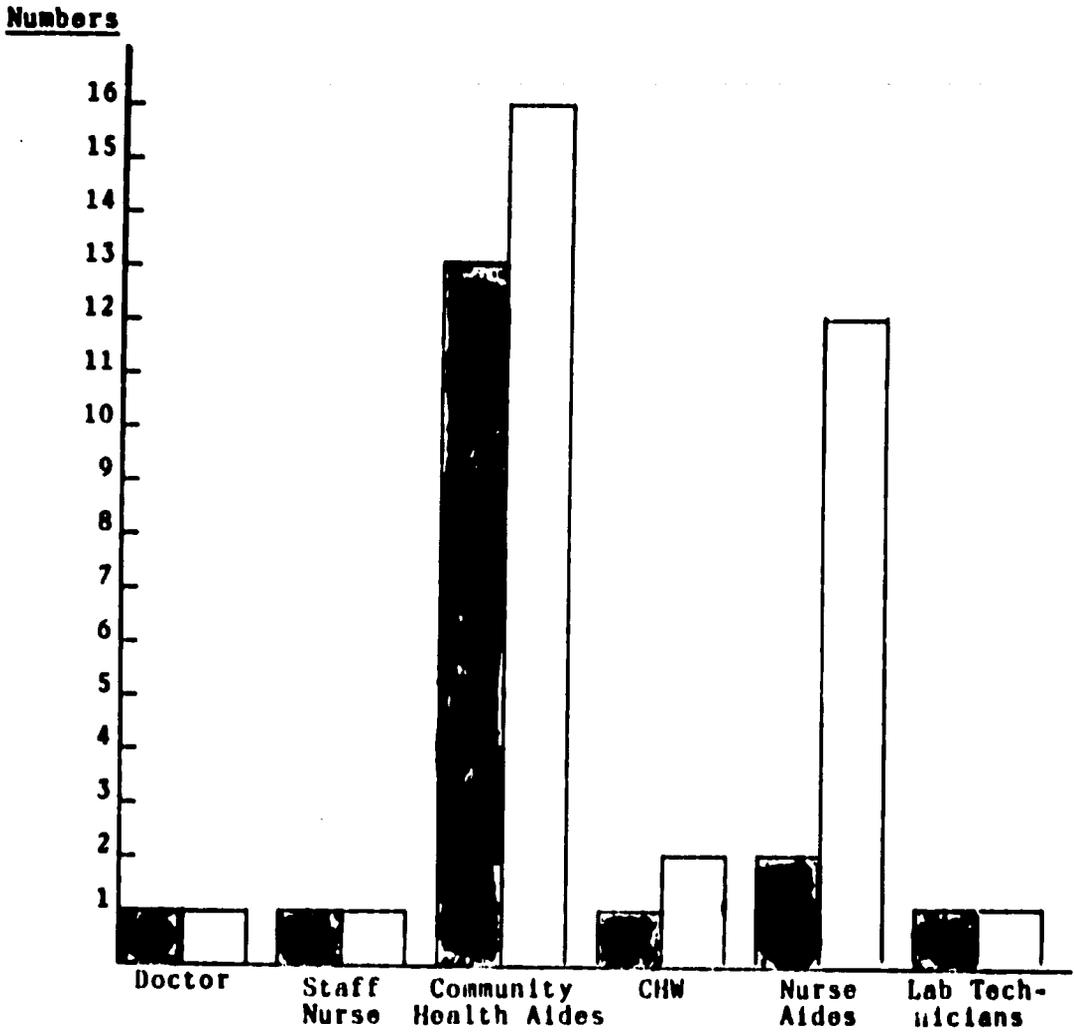
One observation concerning this permanent local staff is that out of 13, all are from Raa Atoll and 5 of these are from Ugoofaaru, where the hospital is located. Since the hospital is supposed to be a four-atoll regional facility, it may be desirable to broaden the representation of the other cooperating atolls on the local staff in the future.

The local staff frequently appeared to be idle during our visits. This is obviously related to the occupancy levels (which averaged 29% on each visit), but two suggestions for better utilization of time would be, commencement of regular rounds of the non-ward rooms of the hospital (i.e. maternity room dressing room etc...) to identify and correct any unsanitary practices,¹¹ and provision of some of the

10. According to the Country Health Plan (1980) the hospital should have a staff nurse, 6 nurse aides and 16 local staff. From this target the hospital is understaffed. Since occupancy is still relatively low, this is not yet a problem, though the staff nurse, on duty only 3 of the last 10 months, is needed on a regular basis, to free the doctor's time, train the local staff and supplement coverage provided by the CHW.

11. Sterile gauze and syringes were both found lying uncovered and exposed in the dressing room during one of our visits.

Table III.3: Hospital Staffing



(source: Country Health Plan, 1980, pp.34-5, interviews)

Actual  Specified 

Dhivehi-language literature now distributed to the CHWs and FHWs, so that in the absence of professional journals and news letters they can engage in some productive form of self-study.

INTESTINAL PARASITE ERADICATION

The original project proposal states that "an intestinal parasite eradication program should also be included to cover the entire atolls. This would be supervised by the CHW and carried out by the FHW and foolhumas". (P.P.,p.9,Para. 3.1.4)¹². This program reference raises several serious questions of interpretation:

- who is to administer this program?
- who is to pay for this program?
- why wasn't this program mentioned under the environmental health section of the project proposal (Para 3.1.3,pp.6-7) which specifically addresses the problems of infant mortality and child death due to waterborne diseases such as diarrhoea, worms and infectious hepatitis, and includes detailed discussion of water and sanitation?

In what is the program to be included? In the proposal? In the refresher courses of the FHWs? (the latter is the subject of the section of the text in which this reference occurs).

12. The other reference to the intestinal parasite program merely states that the program would augment water tank and latrine building activity aimed at reducing infant mortality (which is primarily caused by water borne diseases) (P.P., p.3,top)

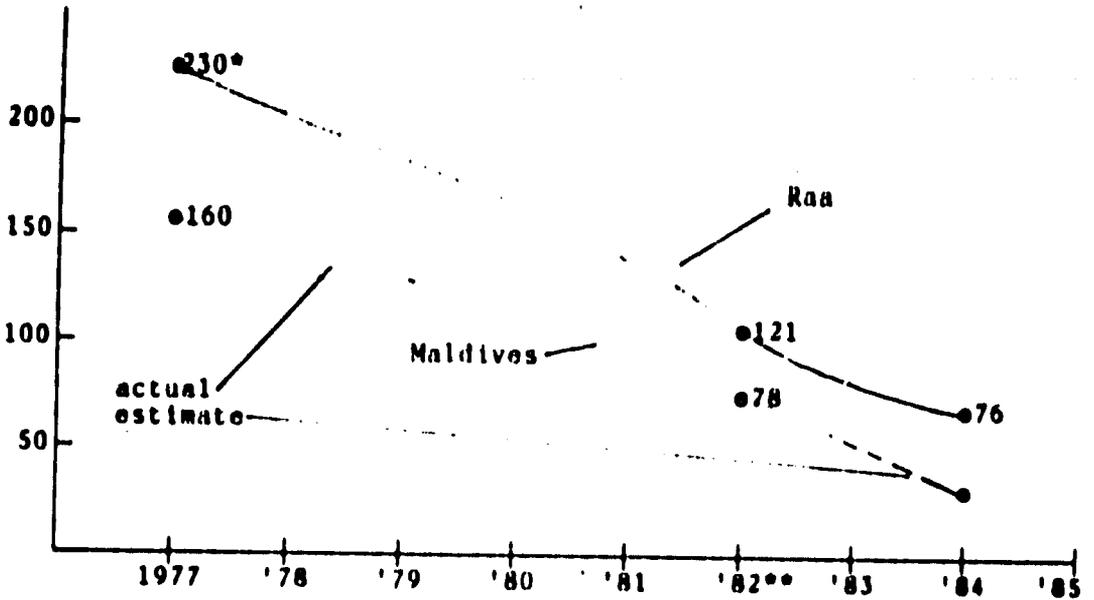
The extension proposal is no help in answering these questions. There is no mention of such a program under "conditions expected at the end of the project" (B.P.,p.8), and although there is a reference to the upgrading of health care in the atoll during the first two years of the project, only "the training of FIWs and volunteers in child growth monitoring, nutrition and health education..." are cited. (B.P.,p.6)

Discussions with Bonnie Kittle regarding the observed lack of any such program in intestinal parasite eradication elicited the response that "since I wasn't competent in this area, I left it to someone who was") discussion with Kittle, Ugoofaaru, 4 February, 1985, 10 a.m.).¹³

An intestinal parasite eradication program was definitely needed in the atoll. Such a program directly supports the project's and the GRM's health goals. It seems, none the less, that because of the mention of this program as an apparent afterthought in the text of the project proposal, and because of the vague manner in which it was referenced, none of the participating parties took responsibility for this program. The signing parties to the original project proposal are collectively at fault for not clarifying or striking this reference during their review of the document. IHAP/Raa appears to have accepted some responsibility for this program as evidenced by Bonnie's statement above. We feel that she should have documented the vagueness of

13. It is interesting to note that in one of our discussions with Peter Buljs, he admitted that he 'forgot it was on the proposal', and thus never acted on it.

Table III.4 : Infant Mortality Changes Over Time^a



* based on WHO sampling, rather than island by island examination of records.

**1980-82 average.

(source: Preliminary Report of the 1983 Health Survey, MOH, Male, Dec. 1983, p.1, T.A.P/Raa statistics, WHO 1977 statistics)

- a. The following are the likely contributing factors to decline in IMR:
- improved living standards (GNP/capita has increased)
 - radio programs on health
 - opening of the regional hospital in April 1984
 - improved fresh water supply
 - better hygiene and cleanliness
 - no epidemics in 1984 (perhaps a result of the above stated factors)

WATER AND SANITATION

Water and sanitation activities consisted of two major components, ferro-cement rainwater tank construction and latrine construction. The extension proposal states that during the extension period (August 1984 to February 1985) "extra emphasis will be placed on water and sanitation" (E.P.,p.1). This emphasis was made explicit later in the proposal where conditions expected at the end of the project were listed to include "safe drinking water should be available to 50% of the atoll by means of ferro-cement rainwater catchment tanks (and) sanitary and environmentally safe human waste disposal systems will have been provided to 25% of the population" (E.P.,p.8). Quantification of the water and sanitation targets was provided in the text as well:

- water tank and latrine construction skills will have been transferred to at least 4 people/island (E.P.,p.8)
- 60 10m³ water catchment tanks (E.P.,p.10)
- 450 Ash Latrines (E.P.,p.10)

These activities will contribute to achieving the project's purpose of improved water quality.

The original project proposal identified the importance of water tanks and latrines within the IHAP project (P.P. pp.3,7) and quantified two outputs:

- 15 Community Latrines (P.P.,p.7)
- one person/island trained in cleaning and functioning of tanks and community latrines (P.P.,p.8)

Water tanks, though mentioned specifically and discussed at some length, were not assigned output target numbers. This might have been a reflection of the novelty of the concept of community-constructed tanks, making speculation on the eventual number of tanks that could be expected to

which contracted for the labour required, the labour would be provided free by the island beneficiaries. The IHAP project supplemented the United Nations/MWSA activities by concentrating on those islands on the atoll that were not designated to receive tanks under the government program. Because the original proposal only stated that IHAP would "contribute as much as possible" to water tank construction in the atoll (P.P.,p.7) the form that water tank construction activities would take was not clearly stated or quantified. Still, recognition of IHAP's inability to meet the MWSA severe drought capacity requirements (2 liters/day/person for 60 days)¹⁵ was definitely made explicit (P.P.,p.7). In addition, demand and location of roof catchment areas were clearly mentioned as potential determinants of the size and number of tanks to be built (P.P.,p.7).

The project document calls for MWSA and IHAP to be jointly responsible for construction material provision for the tanks. (ibid.) From our discussions it appears that MWSA was either not aware of this understanding or was not, due to its charter, rather than reluctance to cooperate, in a position to assist with construction materials. This did not prove to be a setback to the project, as IHAP was able to cover all materials costs from its own budget.

Of all the activities undertaken in support of the health objectives of the project, water tank construction most directly incorporated community participation and decision making into its design and implementation. Community

15. Note: MWSA changed this requirement to 88 days in late 1984, but the IHAP activities have used the original 60 day figure throughout the project.

contribution of interest, labour and local materials are specifically written into the original project proposal (p.7,bottom) and set the tone for the manner in which the tank building was undertaken. To this end both the first and second of the three project purposes detailed in the project extension, actual infrastructure contribution in the field of health and assistance to the population in promoting self-sustaining development, can be said to have been addressed. No tank was built without full participation from the community. The community had to identify for itself the priority it placed on clean water, and had to make firm commitments concerning resource contributions. Since this same process was going on for other projects (rat control, school construction, etc...) a kind of synergistic effect worked to reinforce the community's confidence in itself and keep interest high. Though obstacles were encountered (for example, tanks constructed at the beginning of the project used sand with too high a salt content in the cement mixture, resulting in noticeable rapid structural degradation) none could be called major. Progress in tank construction throughout the atoll was such that the project managers felt confident enough to commit themselves to an objective of safe water being made available to 50% of the atoll through 60 10m³ water catchment tanks by February 1985. (E.P.,pp.8,10).

Neither the objective nor the output level have been achieved. It should be emphasized that the myriad obstacles that led to the "short-fall" from the projected output target were a combination of factors that must be considered "normal" given the environment in which the project is operating. The problems were not exceptional. The project managers, who should, by the time of the drafting of the extension document, have been better able to anticipate and adjust for such factors, were quite simply too ambitious in their projections. The nature of their short-falls is documented in the following table.

Table III.6: Water Tank Data

<u>Island</u>	<u>Popu- lation</u>	<u>No. Of Tanks In Use</u>	<u>No. Of Tanks Comp- leted (But Not In Use)</u>	<u>No. Of Tanks Under Const- ruction</u>	<u>No. Of Tanks Planned</u>	<u>No. Bene- fittin- g (In Use)</u>	<u>No. Bene- fittin- g (In Use, Comp- leted + U.C.)</u>	<u>M³ Req'd</u>	<u>% Of Need Met By Tanks In Use</u>	<u>% Of Need Met By Tanks Comp- leted</u>	<u>% Of Need Met By Tanks U.C.</u>	<u>% Of Need Met By In Use Comp- leted + U.C.</u>
Alifushi	1378	9	0	0	8	751	751	165	54.5	0	0	54.5
Vaadho	269	2	0	0	0	168	168	32	62.5	0	0	62.5
Rasgatheem	604	3	2	1	0	251	501	72	41.6	27.7	13.8	83.1
Angolitheem	252	3	0	0	0	252	252	30	100	0	0	100
Gaundudu	364	4	0	0	0	331	331	44	90.9	0	0	90.9
Ugulu	394	0	5	0	0	0	394	47	0	100	0	100
Ugoofaaru	711	0	0	0	8	0	0	85	0	0	0	0
Maakurathu	606	0	5	0	2	0	414	73	0	68.4	0	68.4
Rasmaadhoo	583	0	0	0	4	0	0	70	0	0	0	0
Iguraidhoo	941	0	0	0	11	0	0	113	0	0	0	0
Meedhoo	1060	0	3	3	6	250	500	127	0	23.6	23.6	47.2
Kinolhas	291	3	0	0	0	0	249	35	85.7	0	0	85.7
TOTAL	7403	24	15	4	37	2003	3560	893	26.8	16.7	4.4	47.9

(source: IHAP/Raa Water Tank Fact Sheet, discussions with project managers)

Fifty percent of the atoll does not have safe drinking water, whether measured by number of people or number of islands. We felt that the most rigorous manner in which to analyze water tank construction data was to look only at water tanks in operation by the completion of the project. The extension proposal does not make this explicit but it is the only sure criterion by which we can measure if the desired objective has been met. On this basis, only 2,003 people, or 17.9% of the population has benefitted from the water tanks. Only one island, Angolitheem, has its drought requirements fully met. This equates to 6.25% of the atoll islands or 2.26% of the population. Even when we included tanks completed but not yet in use (an additional 17 units) and those under construction but not completed (a further 4 units), the percentage of population benefitted only rises to 31.9% and the number of islands able to meet the MWSA-specified drought buffer rises from 1 to 2, or 12.5% of the atoll (5.9% of total population). The project managers argued that tanks planned, but whose construction has not begun, should be included in our calculations. Similarly, they wanted the base population upon which calculations of beneficiaries would be made, to be 7,453 rather than the 11,148 actual population. 7,453 is the population of the 12 islands where some tank activity has taken place (Meduwari, Kandholhudoo, Fainu and Innamadhoo have chosen not to undertake tank construction projects).

Since the project managers have emphasized repeatedly their desire to be held accountable to the measurable outputs stated in the extension proposal (which they drafted) rather than those of the original proposal (into which they had no input), we will honor their wish. With respect to tanks planned, but as yet unbuilt, we cannot accept agreements in principle between island communities and the project managers to constitute achievement of targeted output. To the degree that the project aims to benefit the people of the atoll, only when benefits from project

Table III.7A: Comparative Watertank Costs.

<u>TYPE</u>	<u>Cap:</u> <u>(m)</u>	<u>Cost</u> <u>(ea.)</u>	<u>Funds</u> <u>spent on</u> <u>Labour</u>	<u>\$</u> <u>Cost</u> <u>m</u>	<u>Useful</u> <u>Life</u>	<u>\$</u> <u>Cost</u> <u>year</u>	<u>Cost</u> <u>m/yr</u>	<u>Time to</u> <u>make</u> <u>operational</u>
MWSA/UNCDF Aluminium and Fiberglass	16.0	\$ 8571	\$ 34 ^a	537	10-15	\$ 688	43	3 days
Japanese School Project (Kandholhudhoo) (Fiberglass)	1.6	\$ 1000	\$1200 ^e	1375	10-15	\$ 176	110	3 days
IHAP Ferro-cement	10.0	\$ 197	\$ 87 ^f	28.4	30	\$ 9	.9	30 days ^d
Coral Masonry	3.3	\$ 85	\$ 257 ^g	103	12 ^d	\$ 28	8.5	30 days ^d

Note that the cost/m³ of capacity and cost/m³ annualized over the life of the tank under "normal" assumptions, shows the IHAP tanks clearly offering the greatest value. Even if we change our assumptions to make the other tanks appear as favorable as possible:

(See Table III.7b, page following)

- a. Rf.20/day x 4 men x 3 days (assumes no foreign technical assistance at installation).
- b. Rf.2000 minus labor (4 days x 5 men x Rf.20/day) - crew food (3 men x 4 days x Rf.10/men/day) - transport (20% of total, decrease by 25% for higher content of local material).
- c. 8 bags cement @ Rf.75/bag only non-locally available inputs (appx.).
- d. Rough approximation.
- e. 4 people x 3 days x \$ 100/day.
- f. IHAP project manager, 5% of total time x total 3 year salary @ \$ 75,000/43 completed, under construction and operating tanks.
- g. 30 days x 4 men x Rf.15/day (less skilled).

Table III.7b: Comparative Watertank Costs.

<u>TYPE</u>	<u>Capacity</u>	<u>Cost</u> <u>(ea.)</u>	<u>Useful</u> <u>Life</u>	<u>Cost/</u> <u>m</u>	<u>Cost/</u> <u>yr.</u>	<u>Cost/</u> <u>m³/yr.</u>
MWSA/UNCDF	16	\$ 8605	40	\$ 537	\$ 215	\$ 13
Japanese	1.6	\$ 1300 ^h	40	\$ 812	\$ 32	\$ 20
IHAP	10	\$ 284	30	\$ 28	\$ 9	\$ 0.9
Coral Masonry	3.3	\$ 70 ⁱ	30	\$ 21	\$ 2	\$ 0.7

h. Japanese and MWSA/UNCDF tanks useful life 40 years, coral masonry 20 years. Time to make operational assume 3 people x 2 days @ \$ 50/person/day.

i. Assume 3 men x 6 days x Rf.15/day for labor and only 3 bags cement @ Rf.75/bag.

(sources: MWSA; engineer, Japanese school project (Kandholhudhoo), discussions with project managers and selected estimates).

activities begin to accrue to the intended recipients can output targets be assumed to be successfully met.

In spite of the significant disparity between goal (50% of the population of the atoll¹⁶) and actual (17.9%) several additional points must be mentioned to provide a balanced assessment of the water tank construction undertaking. First, the tanks were built entirely by the islanders -- a major departure from the way in which most public works projects in the atoll had traditionally been executed (schools, clinics, and Island Offices,). Second, the cost of each tank was approximately \$ 284.¹⁷ The value-for-expenditure that this figure represents can be illustrated, comparatively and, by reference to the community benefits achieved for the resources the tanks represent.

We can see that the IHAP tank is offering more value than all but the coral masonry tank. Visual inspection of the Kandholhudhoo coral masonry tanks left us surprised with the extent of their external deterioration since construction in 1981. Though this may be superficial deterioration only, it will require maintenance to ensure that moisture does not permeate further into the cracks ultimately causing leaks. The other 3 tanks are virtually maintenance-free, with the exception of the regular flushing all four designs

16.

Note: No mention is ever made of whether 50% of the population or of the number of the islands will be the relevant measure criterion. We will conform to the project managers' use of "population".

17. See cost calculation in Table III.7 following.

require.¹⁸

In a per capita sense, the tanks have cost the communities that participated in tank building (9 of the 16 islands) \$ 2.14 per person (\$ 284/tank x 39 tanks constructed or in use/5,168 islanders). Even though the tank capacity constructed falls far short of required levels as measured by the MWSA criterion of required levels - 2 liters/person/day for 60 days - in fact, no drought has been recorded in the atoll that has ever lasted 60 days. No island with operational tanks has ever run dry, even allowing for the fact that the entire community uses the tanks (though statistically a smaller part of the island population are rated as beneficiaries). So, in actuality, for the cost of 5 days pay¹⁹ the islanders that participated in tank building were able to improve the quality of their drinking water dramatically, with commensurate anticipated declines in the incidence of diarrhoea, shigella and other water borne diseases. By these measures of cost (value), quality of construction, level of community participation and contribution to national development goals, the water tanks have been a successful activity.

18. Actually, the Japanese tanks require additional flushing since they were constructed without a bypass valve through which roof debris can drain harmlessly out to the ground rather than being deposited in the tank after a new rain. (Interview with construction engineer, Japanese school project, Kandholhudhoo).

19. @ 313 working days/year and \$ 130/year average income.

Tank construction provides direct positive impact on: environmental health, by decreasing the incidence of sickness and mortality from waterborne bacteria)²⁰, public availability of fresh water to the entire population regardless of socio-economic status of the individuals, of the islands with tanks, individual morale (rain water has a decidedly better taste than well water), and community pride (islanders are pleased to be able to refer to the tanks as truly "their own"). Indirect positive impact

20. Note: actual declines in diarrhoea and shigella have been reported where water tanks have been constructed, but the link may be circumstantial. Shaviyani Atoll, two islands, Naafaaru and Hinawadhoo, had a history of annual diarrhoea epidemics prior to the introduction of rain water catchment tanks to Hinawadhoo two years ago. Since then, Naafaaru, the atoll capital, has continued to be stricken by diarrhoea. Hinawadhoo has reportedly only one case per year of debilitating diarrhoea (source: discussion with Abdul Majid Mahir, Director, MWSA, 6 February, 1985, Male). In 1983 when Raa Atoll was stricken with a shigella epidemic, only Kinholas was spared. This island was the only one at the time to have IHAP water tanks already in operation. (Source: discussions with project managers).

includes transfer of tank and gutter making skills from IHAP to the islanders (16 have been trained in water tank construction, 10 in gutter making and training will be given during February 1985 in tank maintenance and operation involving approximately 10 people) and the beginning of the transfer of these skills from one islander to another; adaptation of tank building skills to other kinds of construction (such as wells) providing both public benefit and individual financial gain, increased incidence of private tanks, increasing island fresh water capacity; and identification of spin-off applications for gutter making skills (making ladles, pots, pans, serving spoons etc...). The only direct negative impact from the IHAP tank construction is that MWSA reports a rise in requests for free water tanks, like those provided in Raa, not realizing the terms under which Raa received its tanks.²¹ There is no evident direct negative impact on the islands from the introduction of these water tanks. Indirect impacts are: increased cash requirements for islanders to purchase non-local materials for further tank construction; and possible increase in "conspicuous consumption" as those with higher incomes build (or contract to have built) their own private tanks.²²

21. Interview with Abdul Majid Mahir, Director, MWSA, 22 January, 1985, Male'.

22. Note: This phenomenon of private tank construction will probably not deny anyone access to rainwater. Our impression is that those Maldivians with private water tanks would unquestionably share their water in times of community need. The structure would serve to enhance the convenience and prestige of the owner more than anything else.

The long-term projections for the tank construction program are complicated to assess. For the same reason that we hesitate to recognize the 39 planned, but as yet unbuilt, tanks as existing, simply because agreements of intent were reached between the islands in question and IHAP, we do not feel confident enough to state that the islanders will use what they have learned with IHAP's help to "take off" on their own, self-sustainable tank construction, upgrade and extension program. The design is relatively straightforward and MWSA has just this month published an instruction guide in Dhivehi for the building of ferrocement water tanks. This should help ensure replicability. The one major constraint in this regard will be trained builders. They are still too few to be considered a "critical mass" on any island. This reflects the project managers' failure to meet their self-imposed target (B.P., p.8, bottom) of transferring water tank construction skills to at least 4 people per island. What few do exist will be in increasing demand nationwide, as a result of the general rapid pace of development in the Maldives and the subsequent demand this development generates for skilled workmen, leading to wage offerings vastly superior to those available in Raa Atoll.²³ Though IHAP and MWSA have kept in close contact with each other on matters pertaining to water tank development and construction technique dissemination, MWSA has only limited resources and an overextended staff and will therefore be unable to devote the kind of attention to water tank construction that the project

23. And not fully absorbed by higher costs of living in Malé.

managers did.²⁴

The issue of follow-up maintenance is also a potential negative factor in the long-term sustainability of the IHAP project's water tank construction initiatives. The project managers have offered a course in tank operation and maintenance which shows excellent foresight and planning for long-term sustainability. One of the problems over which they have no control is the make-up of the group of participants in this course. The islanders who attend the course have, in many cases, been selected by the Katoobs or the Island Office. Their basis for selection is whether the individual already knows the intricacies of water tank construction. This means that the chief mason of the island will be chosen, as he will be the person who would have overseen the original tank construction. In most other cases, the same mason will volunteer himself, on the assumption that he is the most reasonable choice. In fact, by having the masons attend the maintenance course, dissemination of information about the tanks is diminished, remaining with only a few, rather than being shared with other members of the community.

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24. MWSA does have plans for a follow-up program in Raa on the two islands with no water tank program at present. It will oversee inculcating the "community development" idea, and see that tanks are built. (Interview with Abdul Majid Mahir, Director, MWSA, 22 January, 1985, Malé).

The masons are key individuals in the social order of the island. They are more skilled and in many cases, wealthier, than the islanders at large. Because their special skills are in high demand they should not be wasted. The masons should not be performing tank maintenance. Maintenance, particularly in the rainy season is nearly a full-time job, but is one that could be performed by any unskilled islander, as long as he or she has been given proper training -- which the IHAP course provides. Because the job is so time consuming, we do not think it is reasonable to ask the mason to accept this responsibility. The community needs him elsewhere.

In addition, we do not think it is reasonable to expect anyone to perform tank maintenance to the quality level required without compensation. The job entails cleaning debris off roofs and out of gutters, flushing the tanks out, painting the tanks, removing the taps and valves after use, opening the valves when rain falls, diverting the initial runoff, overseeing the equitable allocation of water in times of drought and making regular inspections of the tanks. Unless the person selected for this task receives a salary, the job is unlikely to be taken as seriously as it should.

In our questionnaire of FHWs, whose job descriptions include water tank maintenance²⁵ only one has assumed

25. See Revised Syllabus For Family Health Worker (op.cit. p.4). As part of their training in control of diarrhoeal diseases, the FHWs learn about well chlorination and tank maintenance. They are told they will be responsible for tank maintenance, but the Island Office to which the FHW reports in a matrix with the Department of Public Health, does not usually follow-up for formally assigning this task to the FHW. Our questions did not leave us with the feeling that the FHWs had been well trained in tank maintenance procedures.

responsibility for the water tank maintenance, and even he was, in fact, responsible more for water control and distribution than for maintenance, as he had been given no specific training in the latter.

**TABLE III.8: FHM Responsibility For Watertank Operation/
Maintenance**

Responsibility	Percentage
did not know whose responsibility it was	6.250(1)
knew it was their responsibility and performed it	6.250(1)
knew it was their responsibility but did not perform it due to:	
- laziness	0.000
- the island office had not officially "told" him/her to	6.250(1)
- lack of knowledge of what to do	0.000
did not take responsibility because:	
- the island office was responsible	12.500(2)
- the I.D.C. was responsible	6.250(1)
- someone else on the island was responsible	6.250(1)
did not have tanks to take care of	56.250(9)

(source: interviews conducted by evaluation team in Raa Atoll Jan-Feb 1985)

The table illustrates that no consistent policy exists to ensure that water tank maintenance is not neglected. The final obstacle to long-term sustainability will be MWSA. Though its stated policy is to follow a community participation approach to the construction of tanks that will supplement the IHAP contribution after the project's conclusion, by its own admission, it has traditionally used a "forceful" approach. Its defense has been that this has been "faster" than a community-based approach.²⁶ Even though the MWSA has been impressed, even convinced, by the success of the IHAP approach, it does not have the luxury of the time that IHAP had for implementation. Pressures to meet quotas or deadlines may require reversion to a "forceful" approach, which will negate the feeling of community responsibility for the tanks that the islanders feel for the IHAP-assisted tanks. Seen as just another Government project, the islanders will feel no motivation to volunteer to perform any maintenance. With no one performing regular maintenance, tanks will fall into disrepair. This will be an unfortunate setback to the progress IHAP has made in tank constructions.

Our broad recommendations for how to handle these problems are three fold:

- community levy or Island Office discretionary funds should be used to pay for the services of a "Water Operator" on each island with operating public tanks.²⁷ This operator should be trained, either

26. Interview with Abdul Majid Mahir, Director, MWSA, 22 January, 1985, Malé.

27. An alternative to this might be use of the FIW for this job, after some additional training. This could be built into his/her job responsibilities, and would not require paying him/her any supplement to present salary.

- by MWSA or by a "graduate" of the IHAP water maintenance course. (No course graduate should be eligible for the position unless he or she had not been responsible for tank construction earlier).
- MWSA should only offer technical assistance and non-local materials to islands wishing to have tanks. The construction should take place with all possible inputs being provided by the beneficiaries. MWSA should consider using the experienced tank builders now in Raa Atoll as their technical assistance staff, paying them accordingly.
 - Taps and valves should be removed from the tanks and gutters whenever feasible when not in use. This will prevent tampering, unauthorized use of the tanks and damage due to corrosion.
 - Copies of the Dhivehi-language instruction guide to tank construction should be distributed as widely as possible with one copy made available to each Island Office at the very least.

Human Waste Disposal

The IHAP project focussed on waste disposal system construction as one of the two activities (along with water tank construction) where it could help bring significant improvement to the health of the atoll in a relatively short time. The original project proposal called for 15 community latrines to be built, without specifying type or design (P.P..p.7). In the early months of the project, Bonnie and Peter deemed the community latrine unworkable. This assessment was based on a review of design features and inspection in Kandholhudoo of this kind of latrine. On this island 8 community latrines have been built by MWSA to serve a population approaching 2,000. Aside from the major problem of the waste matter being flushed into the sea within the island's lagoon, there were the additional

problems of precious fresh water being used for flushing and of the latrines being used by men only. Women (and most children) continued to "squat" on the beach, causing the dangerous contamination of the ground water mentioned in the section above. From an ecological and environmental health standpoint Bonnie and Peter felt that a less damaging latrine could be introduced that could be used by everyone and that would not contaminate the island ground water (See Table III.9).

Table III.9: Primary Defecation Areas (Nationwide)

<u>Area</u>	<u>Adults</u>	<u>Children</u>
Beach	79%	37%
Gifilli	13%	46%
Public Toilet	1%	0%
Compound or Bush	6%	17%

(source: 1983 Health Survey, op.cit., Male, p.4)

They made modifications in the size, shape and appearance of the Vietnamese composting latrine and emerged with a new design, the Maldive Ash Toilet (MAT). Though no mention of the repudiation of the project document's provision calling for the construction of 15 community toilets was ever formally circulated by Bonnie and Peter²⁸ or agreed to by the participating parties, work was abandoned on community toilet activity and shifted to the MAT. Since the project managers changed the type of latrine they would construct from the one originally specified, & though they made considerable progress on the development and acceptance of the MAT, we cannot evaluate their performance prior

28. The project managers allege that an internal memo was sent to the National Integrated Rural Development Project Coordinating Committee regarding this matter.

to an acceptance of specific reference to Maldivian Ash Toilets in the Extension Proposal. The end-of-project output target stated there, is 450 Ash Latrines by February 1985 (E.P.,p.10). This is supposed to represent a coverage level of 25% of the population (E.P.,p.8). The original proposal referenced the role MWSA would play in implementing latrine construction activities, but with the changes made in the type of latrine, we cannot determine whether MWSA has a clear understanding of its responsibilities within the framework of the IHAP project. It is definitely taking steps to increase the acceptance of the MAT nationwide, but we question whether the MWSA approach is really supporting the IHAP initiatives. Discussions with the Director of MWSA revealed that the 1985 operational plan for the Authority calls for only 5 MATs to be built nationwide, one each on a designated island in each of five atolls. These "demonstration units" are supposed to stimulate interest in follow-on orders which MWSA will try to fill.²⁹ This approach is not really consistent with that used by IHAP, the latter certainly being more intensive in its efforts, and, in terms of island coverage, more extensive as well.

Because trying to change traditional sanitation habits is always difficult, we cannot say that the IHAP project had any more difficulties in this regard than should have been expected.³⁰ Some people are slow to see the link between

29. 6 February, 1985, Malé.

30. We were impressed with the project managers' handling of what was undoubtedly a sensitive cultural and social issue. They were careful not to move too quickly with introduction of the toilets, and they solicited input into the social/cultural implications of specific design features. (See QPR 3,p.8).

defecation on the beach and child illness from contaminated well water. Some do not like the lack of ventilation that a latrine implies when compared to an open beach.³¹ Some do not want to be bothered constructing a latrine when use of the beach requires no expenditure of time or resources.³² Others understand the merit of the MAT but want to "wait and see" what their neighbours will do before they commit themselves to build their own.

These difficulties are occupational hazards in the field of health behaviour modification. When community level awareness-raising is deemed to be an integral aspect of implementation (rather than construction alone) significantly more time must be allowed for the desired results to be achieved.

As with their tank completion estimates, the project managers were unacceptably optimistic given their understanding of the rate at which project implementation proceeds in a Raa Atoll context. Their defense for their over-zealous predictions centers around the failure of USAID/W to promptly advance project extension funds to the Federal Reserve Bank of New York (from whence they would make their way ultimately, to Raa Atoll) in the late summer and fall of 1984, delaying materials procurement by approximately 2 months, and the allowance that must be made for a slow and tentative adoption rate prior to an eventual "take-off of acceptance and demand". We acknowledge USAID/W culpability on the first count, and, while recognizing that

31. This was only the case in the first prototype which was designed into an enclosed space.

32. Interview with Ms. Huzna Razoo, MOH, 21 January, 1985, Male.

the second is a valid explanation of the way adoption would proceed in the atoll, it should have been built into any measurable output targets at the time of the drafting of the Extension Proposal.

The project managers' final defense was that MWSA approval was required before construction on toilets could proceed, and that such approval required a site visit to the atoll which the MWSA mobile team had been unable to schedule. This obstacle was ultimately overcome by the project managers receiving approval from the Director of MWSA to go ahead with the project without waiting for the visit of a mobile team to the atoll. We feel that particularly given the evident MWSA support for the MAT construction initiatives, such approval could have been secured much sooner if it had really been an obstacle (alternatively, more "prototypes" could have been built as they did not require MWSA approval").

The MATs we inspected were well constructed in conformity with the stated design specifications. The owners and builders interviewed seemed to have a clear understanding of operating and maintenance procedures. The islanders who had elected to have MATs were in each case directly involved in the site selection and construction (or the subcontracting of these tasks).

The timing of unit completions reflects heavy "end-loading" of work into the final few months of the project. The project managers realized that they would have to put pressure on the islanders to place their orders for latrines and begin construction if they wanted either IHAP-funded materials or project technical assistance (and if the project managers were to have any hope of reaching their self-imposed targets). The islanders realized for the same reasons that they had to act quickly if they were to benefit from IHAP resources and advice. Though the Extension Proposal

states that the project would benefit from island development being permitted to follow "its natural and most effective pace" (E.P.,p.5). we do not feel that this last-minute flurry of activity, encouraged in part by the project managers, was in keeping with the "natural and most effective pace" of development that they themselves advocated in the Extension Proposal.

It is true that interest in the MAT did begin to pick up of its own accord during the last half of 1984 and the beginning of 1985. We are convinced that after a period of caution, skepticism and low interest, demand for the MAT is beginning to enter a high growth. Due more to a sense of prestige and competitiveness than to any substantially heightened level of awareness of the health benefits of the MAT, islanders are beginning to construct the latrines. This is an achievement in itself and should be properly recognized.

However, the project managers' statistics on MATs built to date grossly and deceptively overrate the number of toilets constructed. The 267 units that they have credited to their self-imposed target of 450 units (E.P.,p.10) includes units committed to, whether built or not.³³ The number should be less than 1/6th what is stated. We mention this to put the slow initial acceptance and the subsequent increased adoption rate into perspective. Though units constructed and in use as of today total only 39 (see Table III.10) this will almost certainly rise to the 267 level within the next 6 months. This number will represent, based on Island Office head-counts of numbers of residents per constructing household, a 15.5% population penetration level.

33. These data are from the IHAP/Raa Sanitation Fact Sheet compiled for the benefit of the evaluation team by the project managers.

Table III.10: Maldivé Ash Toilet Construction

<u>Proto- type</u>	<u>Units in Use</u>	<u>Units under con- struction</u>	<u>Units Planned</u>	<u>Number of Benefi- ciaries</u>	<u>Percentage of Pop. Bene- fitting</u>
14	25	64	182	252 ^a	2.3%

(source: page by page tabulation from the island briefing sheets prepared by Peter Buijs, IHAP/Raa, 24 January, 1985).

- a. The summary data the project managers prepared for the evaluation team aggregates prototypes, units completed, units under construction and units planned, into a single number, 267, from which they calculate based on actual counts of the number of registered residents in each of the houses for which these units have been built or designated, the number of beneficiaries (1,728). Since the actual number of units in use, including prototypes is only 39, or 14.6% of the number misleadingly given by the project managers, we have used 14.6% of their beneficiary number (1,728 x 14.6% = 252) for our approximation of the actual number of beneficiaries. The percentage of the population this figure represents is 252/11,148 or 2.3%.

It is too early to speak with conviction about the impact of MAT construction in the atoll. Positive direct impacts will certainly include reduction in the contamination of the ground water by human waste, increase in waterborne bacteria-contracted disease, improvement in privacy provided for personal hygiene and a raising of the overall sanitation standards (to include incidence of flies, unpleasant odors etc...). Indirect positive impact will be visible in health and sanitation awareness levels. Though it was stated above that few of the people we interviewed had a detailed under-

standing of the link between their defecation practices and the high incidence of diarrhoea, shigella, dysentery and hepatitis in their communities, they did display increased awareness as a result of the MAT construction program.

More work needs to be done on this community education front, but a start has been made and some progress has taken place. Construction and masonry skills have found new applications with the advent of the MATs. The contracting of toilet building to trained toilet builders on the islands will have favorable income generating effects for this group. Though the toilet construction cannot be considered a community participation activity along the line of tank or school construction, elements of community participation were evident and, we feel, were strengthened by the toilet building. Early discussions about the efficacy of the MAT were held with groups within the island population. During these discussions, the subject of the toilets generated priorities, opinions and interchanges among the islanders that will have positive long-term effects on community willingness to experiment, adopt new ideas, and mobilize island support and interest for worthy causes.

The final important impact of the MAT is on agriculture. The carbonized fecal residue makes a rich fertilizer and this valuable "extra-benefit" of the MAT is well recognized (though most have not had their MAT long enough to have created their initial batch of composted fertilizer).

On the negative side the design of the MAT precludes its construction in confined spaces, including small or oddly-shaped gillilis (traditional Maldivian bathing and toilet areas adjacent to the living quarters). This means that some people simply will not be able to build one, even after they become "standard" on a given island. The only other potential problem that we can identify concerns removal of the carbonized fecal waste from the latrine

chambers. Culturally, this is not work that the Maldivians take to easily. The fact that neither texture nor odor immediately conjure up images of human waste may help, but we are not yet confident that people will be enthusiastic about cleaning out the latrine chambers when required. At worst, if they do not, when both chambers are full the MAT will be abandoned. This would be a great setback.

Another interesting problem we have seen, related to the chamber-cleaning described above, arises when one person contracts another to remove the composted waste from his or her latrine and spread it as fertilizer. The person removing the waste matter has been known to keep it for himself (against the wishes of the party hiring him). Some clear arrangements will have to be worked out to avoid escalation of problems of this kind.

MAT construction should continue into the foreseeable future. Toilet ownership confers a certain status, and once a situation such as this exists, the task of encouraging adoption becomes easy. The reasonable cost, (less than Rf. 300 or \$ 43 see Table III.11), simplicity of design and interest of MWSA in continuing the work of IHAP in the atoll and if interest appears high, nationwide, should ensure the long-term continued expansion of the number of MATs in Raa Atoll.

The 8 individuals who have attended the IHAP course in MAT building³⁴ form an inadequate core from which to launch serious islander to islander skill transfer efforts. This, more than lack of demand, may slow the spread of the MAT in those islands where there are insufficient trained MAT-builders. On only a few islands could we say that 4

34. Program Sheet: Human Resource Development IHAP/Raa,
prepared for the evaluation team February 1985.

people existed capable of independently constructing a MAT -- though this was the self-imposed target of the project managers in the Extension Proposal (E.P., p.8).

Follow-up recommendations include:

- provision for some MATs in public places such as schools and Island Offices (with someone designated by the Island Office to be responsible for maintenance) for the use both by the occupants of such buildings and by islanders who, for whatever reason, do not, or cannot, have an MAT of their own.
- more education of the public on the link between defecation habits and health (this can be an ongoing responsibility of the FIW).
- increase in MWSA's rate of MAT introduction, nationwide, even at the demonstration stage.

MANPOWER TRAINING

This final section of the health chapter deals with specifically health-related human resource development: Community Health Workers (CHWs), Family Health Workers (FHWs) and Poolhumas (traditional birth attendants).³⁵

IHAP correctly recognized that health as a goal cannot be pursued independently from the institutions and health care delivery services that will teach people how to take better care of themselves and how, when necessary, to make full use of the medical facilities provided both by the

35. Tank, gutter and latrine makers, though health-related, have been dealt with in earlier sections.

Table III.11: Comparative Toilet Facility Costs

<u>Facility Type</u>	<u>Cost</u>
MAT	\$ 43
Septic Tank ^a	\$ 43
Manual Flush Toilet ^b	\$107
Community Latrine (per seat) ^c	\$120
"Real" Flush Toilet	\$679
Gifilli	\$ 0
Beach	\$ 0

(source: Abdul Majid Mahir, Director, MWSA)

- a. Contaminates ground water.
- b. The cost of piping out to the sea has been included (estimated at \$ 36 of total cost).
- c. This is the same as the \$ 107 for a manual flush toilet plus an allowance for shelter construction materials (\$ 13/seat).

government and by traditional sources. By focussing its attention on the three paramedical staffing levels that have the greatest public interface (and thus the greatest opportunity to raise awareness and demonstrate high standards of public health) the project remained consistent to its commitment to community involvement. Many of IHAP's other activities were aimed at the islanders themselves. In health manpower training the emphasis shifted to those community resource people (foolhumas, paramedical personnel) who would have the respect of and access to the islanders on a day to day basis (see Table III.12). Their level of training will directly affect the ultimate health of the islanders. Each of the three types of paramedical staff training provided will be briefly evaluated below.

Community Health Workers

The CHW is, in most atolls, (so without their own hospital) the senior health officer for the atoll.(S)he

will be responsible for all the FHW's activities in the atoll, screening of patients for referral to either the regional hospital or the Male Central Hospital, and the overall public health of the atoll. The original project proposal states that "within 2 years (of the commencement of the project) there will be 2 CHWs in each health center (or hospital) (P.P.,p.4) without specifying whose responsibility it would be to ensure that this takes place. The MOH is given the task of providing support for the CHWs in the document (P.P.,p.18). Finally, IHAP was made responsible for providing supplemental training to CHWs (P.P.,p.3).

The original proposal did not convey that its drafters fully understood the organizational structure of the MOH. The Ministry, through the Department of Public Health (DPH), assigns, augments and rotates all CHWs. The Allied Health Services Training Center (AHSTC) provides entry level, supplemental and refresher training to the CHWs. IHAP can offer CHW training if approved to do so by AHSTC. It does not have the power to release a CHW from his other regular responsibilities to attend training. This rests with the DPH.

It is thus doubtful whether the signatory parties to the original proposal closely examined the document they signed. If they had, the ambiguity over the assignment of a "community health supervisor" (P.P.,p.5), (a job title that does not exist within the DPH) and ambiguity over who will be responsible for raising the number of CHWs per clinic (or hospital) from 1 to 2, would not have occurred. These problems, were for the most part, overlooked because with only 1 CHW in the atoll, the demands on his or her time were generally too great for him or her to take time away for additional training. The dearth of trained CHWs meant that no additional CHW existed to be brought into the atoll.³⁶

36. Interview with Kuzna Razeo, Under Secretary, MOH, 21 January, 1985, Male.

Table III.12: Raa Atoll Health Manpower Goal

	<u>Practicing</u>	<u>In Training</u>	<u>Goal</u>
Foolhuma	16	4	36 ^a
FIW	16		17
CHW	1		4

(source: Mr. Tutu Didi, Director, AHSTC)

- a. There are presently 16 trained foolhumas in the atoll, though they are inequitably distributed throughout the islands. Twenty one estimated to be untrained, and programs are now underway to upgrade these to trained foolhumas status.

Nevertheless, in comparing original project design with actual events, there were significant flaws in the CHW component that might have been avoided, producing better health services delivery for the atoll, through the signatories having clarified and reviewed the document at the outset. The MOH, as stated, above, was constrained by a shortage of the proper personnel, from assigning a second, full-time CHW to Raa Atoll. When a special request was made for a single 3 month augmentation in 1984, the Ministry complied.³⁷ Though it is possible that a similar procedure could have been used on other occasions the MOH might not have had the available staff, and the optimal use of the solitary atoll CHW might have been in the hospital, not in a course.

There is no mention of CHWs in the Extension Proposal so we must conclude that the project managers have come to realize that they had little control over the assignment and training of CHWs and that their time was better spent on more productive activities. Such a repudiation of a component of the original project proposal (assignment and training of CHWs) should have been documented. The Extension Proposal nowhere identifies that outputs and objectives are no longer going to be part of the project (see Chapter II p.2. top).

Because the Raa CHW³⁸ received no supplemental training we cannot really evaluate the success of this aspect of

37. This was done so the primary CHW could prepare lessons for use in a FHW training seminar in which he was under IHAP supervision.

38. There was a series of CHWs during the life of the project but no supplemental training was given to any of them.

the project.³⁹ It was perhaps unrealistic to expect that the CHW would be released for training given the day-to-day demands of the job. On the other hand, it is precisely those demands that increased the need for the CHW to be on the "cutting edge" of the profession as highly trained as possible. A certain amount of subjectivity enters into the tradeoff analysis of whether to sacrifice CHW coverage in the short-run to have a better qualified CHW in the long-run (after additional training). If one chooses CHW coverage one denies the community the benefit of the best possible levels of health care and denies the CHW the job development and enhancement that training offers. We feel that the MOH, through its relevant agencies (DPH and AHSTC) as well as IHAP, erred in choosing the second of these two tradeoffs so unequivocally, particularly after a resident physician was assigned to the Raa hospital. The doctor could have filled in for the CHW while the latter received some additional training. This would have been particularly useful for the CHW now at the hospital, as we did not feel that he was fully equipped to even meet his basic job description⁴⁰ and is thus, in special need

39. With the exception of on-the-job training that one CHW received by helping in the preparation of an FIW course in which he taught one block of instruction.

40. Upon questioning, he was unable to explain how to identify a leprosy/T.B. case. He could only explain how to test for T.B. once a case was identified. By his own admission, his basic training was weak because it was in english, of which he has only a minimal grasp, and because the lectures gave little opportunity for discussion and question. (Interview with Mohamed Ahmod, CHW Raa Hospital, 29 January 1985).

of additional training.

Recommendations for CHW training will be limited to those that can improve the health delivery to the residents of Raa Atoll.

- CHW should be encouraged to audit parts of the FHW and Foolhuma courses offered at the Atoll Training Center.
- CHW should be released for the Midwifery For CHWs course offered by AISTC in Male?
- CHW should be much more of a direct supervisor to the FHWs. Bonnie Kittle took over this responsibility (perhaps unconsciously) and was very effective. It is doubtful though, whether the present CHW has the enthusiasm to seek out the FHWs, create training programs, explain new products and oversee their distribution etc... A void will thus be created after Bonnie's departure that the CHW must be groomed to fill.

Foolhuma Training

The training of foolhumas (Dhivehi for midwife or traditional birth attendant) was identified jointly by AISTC, MOH and IHAP during the project as an area where IHAP could make an important contribution to community health in the atoll. Nearly 98% of all pregnant mothers have their babies delivered by foolhumas.⁴¹ The opportunity that this contact presents for dissemination of accurate maternal and child health care information was recognized by IHAP, MOH and AISTC. The majority of foolhumas in Raa

41. Preliminary Report of the 1983 Health Survey, op.cit.,p.2 (this is national, not Raa Atoll data. The number may be lower for Raa due to increasing preference for hospital delivery).

(550)⁴² are not formally trained, but have learned their craft through traditional apprenticeship with more experienced village midwives, often quite experienced, but in most cases, lacking in any formal training themselves. The idea behind a measurable output target of the IHAP-trained foolhumas (E.P.,p.10) was that this was seen as a manageable number that would significantly improve the percentage of the atoll's foolhumas that were trained (from 45% to 72%).⁴³ These foolhumas were to be an integral part of the effort supported vigorously on several fronts by IHAP to decrease infant mortality rates (E.P.,p.9) as well as maternal mortality (E.P.,p.6 and Table III.13).

Table III.13: Provision of Antenatal & Delivery Care^a

<u>Category</u>	<u>Antenatal Care</u>		<u>Delivery</u>	
	Number	Percent	Number	Percent
No One	221	52.2	0	0
FHW	3	0.7	0	0
CHW	72	17.0	14	3.0
Doctor	29	6.8	0	0
Foolhuma trained	95	22.4	166	35.8
Foolhuma, untrained	0	0	283	61.0
Other (relative)	3	0.7	1	0.2

(source : 1983 Health Survey, Annex I, Table 2.8,p.11)1

^a. Nationally.

AHSTC cooperated with IHAP in the creation of the atoll-based foolhuma training program, and in the extension of an offer to a British Voluntary Services Overseas (VSO) worker to come to Raa for two years to take charge of the foolhuma training.

42. AHSTC records show 16 trained foolhumas. Evaluators and AHSTC jointly estimated 20 untrained.

43. Data provided by Tutu Didi, Director, AHSTC, Male', 6 Feb. 1985.

The response from the islands to the announcement that foolhuma training leading to full accreditation would be conducted within the atoll was high. The difficulties being encountered in the training now underway reflect the low literacy and advanced age⁴⁴ of the participants. This may in part explain why only 4 are being trained per class. Visual aids are used extensively to avoid problems that an overabundance of written material would create. Logistical problems, such as the availability of the health launch (boat) to the foolhuma trainers, are being resolved.

The project was committed to producing 10 trained foolhumas by its conclusion (E.P.,p.10). Only 40% of this target output will have been met by the end of the project, assuming that the 4 now undergoing training complete it successfully. None of the quarterly reports given any explanation for IHAPs inability to achieve its self-imposed target. Though we are confident that the system is in place for at least 6 more foolhumas to be trained, over-optimism on output target projections has proved to be a recurring and disappointing theme applying to virtually all health initiatives reviewed.

Because of the impressive background Ms. Trudy Stevens, the VSO midwifery trainer brings to the job, the quality of the program graduates should be acceptable, though, in our experience, the first iteration of a new curriculum often has inherent problems that can only be resolved by actually proceeding once through the material, even if quality might be sacrificed to some degree.

The budget approved in the Extension Proposal provided for the salary of the foolhuma trainer. The remaining program expenditures have been covered without overrun through use

⁴⁴. The average is approximately 50 years.

of budgeted health operating funds.⁴⁵ We feel that the foolhuma training supports the project purposes and that the funds are being well spent.

The impact of this training will positively contribute to maternal and child health, to the government's objective of improving health service delivery in the atolls, and to the health education skills of the foolhuma training counterpart who is working closely with the instructor. Indirectly, this training assists, the AHSTC by freeing its staff to teach other foolhumas. Also, it provides an opportunity for AHSTC to evaluate the curriculum experimentation that was built into the training. As ASHTC hopes to implement a nationwide policy of permitting only "trained" foolhumas to practice, any addition IHAP can help make to the body of trained foolhumas will make implementation of this new policy more practical. We can see no negative results direct or indirect, from this training.

The long-term sustainability of foolhuma training is assured by the presence of an expatriate midwifery instructor for an additional 18 months after the completion of the project⁴⁶ and the clear commitment of the AHSTC to continuation of foolhuma training, both for Raa Atoll

45. Partly through reallocation of \$ 10,000 of Women in Development funds to foolhuma training.

46. It would have been preferable to have had a Raa Atoll resident for her counterpart rather than one from a southern atoll. There is still time to hire an under-study from Raa to apprentice with the British Volunteer and her counterpart.

and the rest of the country. The main issue affecting sustainability is the age of the participants. Largely because of the declining interest by young women in learning the skills of midwifery, the average age of the foolhumas has been climbing steadily. The IHAP training program addressed the short-term need to upgrade the skills of existing "traditional" foolhumas, but does not address the question of where the next generation of midwives will be found. The women presently undergoing foolhuma training have the advantage of significant experience. Aside from this, no convincing arguments can be made concerning training these people rather than younger women, even if increased effort must be expended to identify and motivate such young women into participation.

The following Table reflects the relative merits of training older versus younger foolhumas.

Table III.14: Relative Advantages of Training Older and Younger Foolhumas

<u>Factor</u>	<u>Older</u>	<u>Younger</u>
Retains what is taught	Less	More
Attention span during training	lower	Higher
Number of bad habits needing "re-teaching"	Many	Few
Number of years of return on government/ IHAP investment in training	Low (appx 10 years)	High (appx 40 years)
Practical framework in which to place training	Good	Poor
Initial community acceptance after training ^a	High	Low
Opportunity for passing skills acquired on to others	Low	High
Literacy	Lower	Higher

^a. Not always true. We heard of many old foolhumas who were "out of favor", so age alone does not determine acceptance. Particularly dynamic ones can gain acceptance.

We are impressed with the care, and preparation and resources, both human and financial, that have been committed to the foolhuma training program. We feel that the government's long-term interest in its success will guarantee its sustainability. We recommend that the issues raised in Table III.5 above be considered carefully as the program undergoes periodic re-evaluation. Some thought might be given to encouraging male foolhumas to apply for training. Of six foolhumas asked whether they would train a male foolhuma if asked, five (83.3%) said they would*. Though initial acceptance might not be encouraging, the fact that the doctor for the Atoll, the CHW and six out of the sixteen FHWs are male, and for the most part, accepted by the female islanders, shows that changes in attitudes in this respect are possible.

Family Health Workers

Family Health Workers(FHWs) are the primary change agents in the government's efforts to improve the quality of life of the Atoll residents through better health care, health education and ultimately, better health. Considerable misunderstanding exists concerning the FHW's capability. At one end of the spectrum is the material actually retained and and practiced by the FHWs. At the other extreme are the expectations of the participating parties of the role the FHWs will play in implementing the health objectives of the project. In between is the capability suggested by the syllabus of the FHW course taught by AHSTC. It is realistic in its breadth, and focused on basic primary health care and public health education. The Table below details the differences between actual, expected and stipulated (in the project proposal and extension) capabilities.

* See last page of chapter for dissenting opinion.

Table III.15: FHW Capability

ACTUAL CAPABILITY ^a	<div data-bbox="706 274 1374 425" style="border: 1px solid black; padding: 5px;"> <p>Understands the system of medical referral (93%) Grasps basic concepts of first aid (29%) Understands the techniques of baby growth monitoring (80%) Have planted their own garden (19%) Able to chlorinate a well (93%)</p> </div>
ANSTC COURSE COMPLETION CAPABILITY	<div data-bbox="999 438 1734 700" style="border: 1px solid black; padding: 5px;"> <p>Understanding of family health in island community (Syll.,p.3); MDH "obstetrical physiology, recognition of high-risk mothers, growth monitoring, breast feeding, introduction of solid foods for infants, disease prevention (ibid.); Home treatment of common ailments (incl. diarrhoea, dehydration, dysentery, constipation, aches, abdominal pain, fever, lice, scabies) (ibid.); First aid on accidents (cuts, bleeding, burns, poisoning) (ibid.); Support of national control programs (T.B., leprosy, water & sanitation, malaria) (ibid.,p.3); communication skills.</p> </div>
CAPABILITY IMPLIED BY PROJECT PROPOSAL	<p>Maintenance of rain catchments & community latrines (p.3) Raised health awareness through provision of preventive services & health education (p.4) Refer patients to the CHW/Regional Hospital (p.9) Dispense simple drugs for treatment (p.9) Intestinal parasite eradication program carried out (p.9) Advise mothers on basic MDH care and offer nutrition education (p.9) Make presentations on family nutrition to women's groups (p.14)</p>
EXTENSION PROPOSAL	<p>Conducting monthly growth monitoring sessions (E.P.,p.8) Appropriate & effective health ed. lessons to needy mothers and children (E.P.,pp.8-9)</p>

^a. The FHW do possess other capabilities, but not that we were able to quantify. In general, they did not know about side effects of medication, differences in dosages for adults and children, restrictions on use of certain medications during pregnancy; they did not understand the theory behind baby weighing, only the mechanics of filling out the growth monitoring cards. They did not perform more than a half-dozen visits per day (which might produce two actions, or consultations); they were very poor at interpersonal skills; they had not aggressively promoted health-improving products (skin soap).

(See Appendix 3.C for greater details of FHW survey) (Source: FHW survey (Annex 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

Because the project proposal and the extension both focus on what role FHWs will play in project implementation rather than on what the project will do for FHWs, it is extremely difficult to evaluate this element of health sector activity. All parties have remained in agreement throughout the life of the project on the use to which the FHWs would be put. This is unfortunate in that this suggests that not enough testing of the assumptions concerning the capabilities of the FHWs was made during the project period. Credit should be given for the identification by the project managers of the need to organize supplementary training for the FHWs in those areas where other activities within the IHAP project plan would depend on their credible input.

Table III.16: IHAP Courses For Family Health Workers^a

<u>Title</u>	<u>Numbers Attending</u>	<u>Course Length(days)</u>
Intro. to Growth Monitoring	12	3
Growth Monitoring I	9	6
Growth Monitoring II	7	6
Health Ed. & Nutrition I	5	7
Health Ed. & Nutrition II	8	7
Water & Sanitation	7	8
Pre-Natal Care	7	5

(source: IHAP/Raa files, program sheet entitled "Human Resources Development")

a. other IHAP courses were sometimes taken by FHWs: rat control and MAT are examples.

Refresher and upgrade training are definitely required if the FHWs are to effectively perform the tasks assigned them. The AIRSTC course in Laviyani Atoll entitled "Training Course On Traditional Medicine For FHWs and Traditional

Medicine Practitioners"⁴⁷ is a step in this direction, but AHSTC must address deficiencies in order of their priority. We feel that the most limiting deficiency in the PHW training is in the area of interpersonal skills. As the key change agents in the health sector at the island level, PHWs require powers of persuasion, and a maintained and regularly updated body of basic medical, health and nutrition information. They should possess the ability to perform basic diagnoses and referral up through the health care system and an ability to explain to the patients the link between their health and sanitation practices and their ailments with relevant recommendations, tailored to the individual situation, for corrective action. Greater emphasis on role play, simulation, stress-testing and problem solving are required to achieve the utility now being asked from the PHWs.

Of the outputs expected of the PHWs according to the extension proposal (conducting monthly growth monitoring sessions and providing appropriate and effective health education lessons (E.P.,pp.8-9), neither can be deemed to be at acceptable levels at this time. Though growth monitoring has been given extremely heavy emphasis by the project managers, it has not been quantitatively or qualitatively successful to date. Inspection of the statistics sheets the PHWs are required to send to the hospital in Ugoofaaru every month revealed that from May 1984 to January 1985 for the 14 islands in the baby weighing program, reporting was so erratic and incomplete that only four sequential months of data (September, October, November and December) could be tabulated, and this was only possible

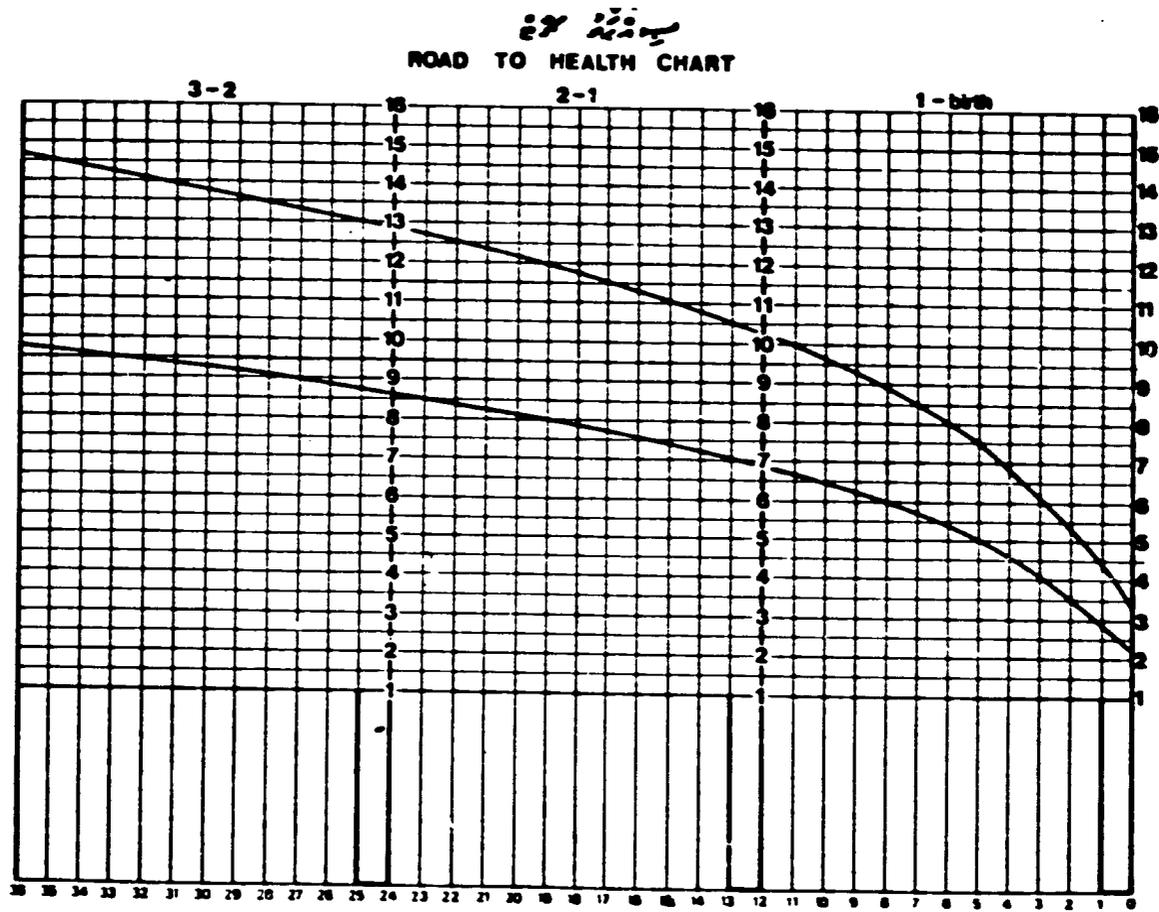
⁴⁷: This is a 4 week, experimental course, that could be expanded to other atolls if popular and successful. It is UNDP funded and costs \$ 2,500 to run, including the support of 6 staff members (source: Tutu Didi, Director, AHSTC, Malé).

for three islands (Angolitheom, Kinolhas and Ugoofaaru).⁴⁸ The actual growth charts on the child health cards (see sample, Table III.17) were sometimes improperly filled out. Specific questions about "normal" weight, differences according to sex, why monitoring stops at 36 months and methods of inducing recalcitrant mothers to bring their babies for weighing elicited unacceptably vague, incomplete and erroneous responses in almost all cases. The provision of appropriate and effective health education lessons presupposes an ability to disseminate precise, complete, factually accurate information. This ability does not exist among the majority of the FIWs.

Though the quality of the FIW's output is seriously flawed, their positive impact on the health objectives of the project are clearly visible. On one island, (Gaaundudu) the FIW has taken total and complete control of the island's water tank maintenance and water tank distribution. On another, the FIW has integrated nutrition classes into the formal primary school curriculum and she volunteers her teaching time. A third has planted a successful garden with over 10 varieties of fruits and vegetables, leading to adoption of home gardening by others on the island. The baby weighing, for all its inadequacies, gives the FIW an opportunity to discuss health problems and practices with mothers, and to detect child malnutrition in its early stages so that nutrition advice and, in serious and persistent cases, emergency medical treatment by the doctor can be given. The mothers and children who attend baby weighing, and that percentage of the population (about 20%) that has consulted with the FIW, all receive direct positive

48. See Appendix 3.A for tabulation of results from these 3 islands.

Table III.17: Sample Growth Monitoring Chart



impact from the FIWs. The island communities as a whole, now uniformly aware of the existence of a health care resource person on their respective islands, thereby benefit as well. Similarly, the effectiveness of the doctor and CHW in Ugoofaaru are enhanced by the screening and referral services that some of the FIWs provide.

The public health aspect of the FHW's job should have an indirect impact on agricultural programs through implementation by islanders of FHW suggestions to eradicate rats, diversify their garden crop mix, and utilize the composted excreta from the MAT for garden fertilizer.

There have been several unfortunate negative effects of the FHW training programs and activities. The most important has been the disillusionment described by many of the FHWs when interviewed, that mothers experience when they discover that the FIW cannot dispense medicine (with the exception of a few very basic items such as Flavine, Disprin and Wormax) and that they cannot receive free the food the FHW recommends as an infant diet supplement. Some mothers have stopped visiting the FIW, dissatisfied with this FHW inability to provide significant curative services. Obviously, neither the IHAP nor the AISTC FHW training sufficiently addresses this issue. Bridging this gap in understanding is part of the education the FIW is there to provide the community. In a poor country where rural health care is being made available for the first time, some inflation of expectation may be considered normal. FIW training must be more sensitive to this.

The second direct negative consequence of the FIW programme has been the politicization of the selection process of the FIWs. In fact, because of IHAPs success in convincing the katheeb (island chief) of the importance of the FIW to the island (see Table III.18 following), the katheeb, in a number of cases, has seen fit to intervene directly in the

selection process, often using loyalty rather than interest or competence as the primary criterion for endorsement.

Table III.18: Method of Selection for FHW Training

By katheeb	35.3%
By Island Development Committee	5.8%
By school principal	5.8%
Self-selected	11.7%
N/A	41.4% ^a

(source : evaluation team FHW survey)

- ^a. This item reflects the fact that this question was not asked on some of the early islands visited. We suspect it would have distributed among the other four categories in the same proportion as those four categories now show. This will bring the percentage chosen by katheeb up to 60.2%.

One final negative repercussion of FHW activity, though an indirect one, has been the raising of islander expectations about the ability of the soil to support the planting of the crops suggested by the FHW in his or her diet diversification and expansion recommendation (this was reported on 6 islands). Lack of quality seeds, good advice, fertile soil and, in some cases, favourable weather conditions, has discouraged many would-be home gardeners and has damaged the fragile credibility of the FHWs.

Our recommendations for FHW activity in the future are :

- FHWs must be thoroughly trained in the difference between a preventive and curative health resource person so that they fully understand it and can explain it clearly to their constituents.
- selection of FHWs should be on merit and interest only. FHWs need a special briefing on referral of cases through the formal medical channels

- (FHW → CHW → doctor at atoll hospital → Male Central Hospital) and the informal channels (FHW to spirit doctor or hakoem) and when use of each is most appropriate.
- regardless of the registration and attendance figures and regardless of the negative indications during weighing, monthly growth statistics must be faithfully and accurately maintained and forwarded to the regional hospital on a monthly basis as specified.
- the CHW should take personal responsibility for the FHW activities on Iguraidhoo, to ensure that the entire atoll maintains a common minimum level of health services access, since the island has no FHW.
- more training bulletins, similar to the new one now being produced on identification and early treatment of leprosy, should be distributed to the FHWs, who have little work-related reading or reference material.
- regular refresher training at the RATC, combined with short internships at the hospital, for FHWs and foolhumas.

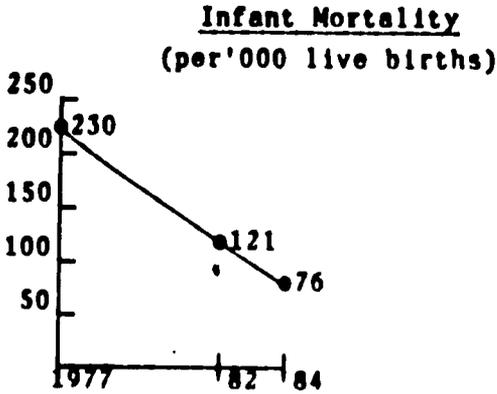
Final Comments

The IHAP program has definitely contributed to measurable improvements in the health of the population of Raa Atoll (see Table III.18). To have the intended positive impact on the standard of living of the population, nutrition must be given even higher priority or the changes in diet will be toward Coca Cola and sugar-rich imported foodstuffs as is happening in Male, rather than toward fresh vegetables and other sources of vitamins and complex carbohydrates. Population control efforts must be undertaken if the Atoll is to avoid having its health services infrastructure overtaxed in the future. The present atoll annual population growth rate is 3.45%, one of the highest in the world.

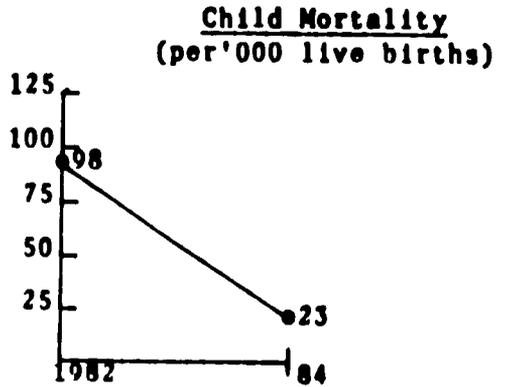
The public, at all levels, confirms that medical care, health facilities and even islander health itself have improved "dramatically" in the last few years. This perception is critical for retaining and increasing the participation of the public in community health improvement programs in the future.

Compared to the occasional attention paid any given atoll by the Ministry of Health, due to its resource constraints, the IHAP project has been able to provide 3 years of continuous attention to virtually all aspects of the health problems of Raa Atoll. Though it is recognized that this level of attention and activity will not be fully sustainable after IHAP's departure, the infrastructure provided (water tanks, latrines, hospital) and personnel trained (foolhumas and FIWs as well as tank, gutter and latrine builders) will increasingly prove their utility to the community in the years to come.

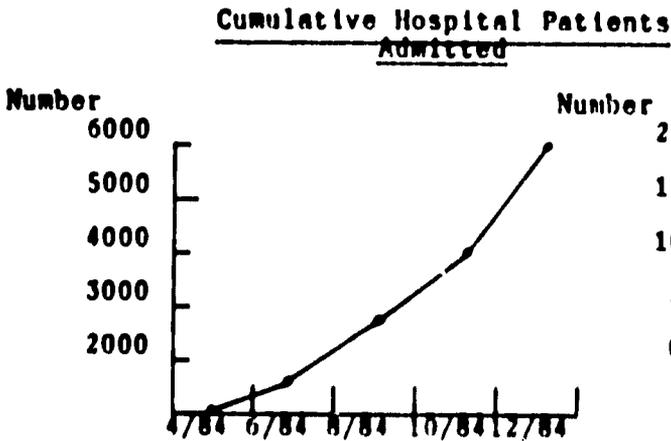
Table III.19: Raa Atoll Health Related Indicators



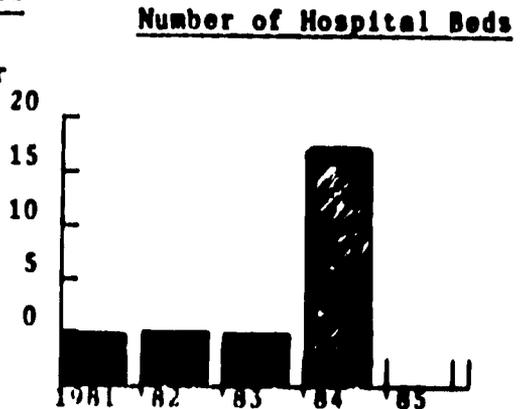
(source: IHAP/Raa Fact Sheet: Population, Birth and Infant Mortality, WHO 1977 statistics)



(source: IHAP/Raa Fact Sheet: Population, Birth and Infant Mortality)



(source: Ugoofaaru Regional Hospital records)



(source: Ugoofaaru Regional Hospital records)

Dissenting Opinion III.1

(Dr. Nott) It was not possible to investigate the cultural and social acceptability of such a measure. It would also represent an unnecessary male incursion into one of the few traditionally female areas of "technical" expertise.

IV. AGRICULTURE

Method

The method used took three forms, examination of the project documentation relevant to agriculture, interviews with Bonnie and Peter and interviews with islanders: including both those who had and had not participated in IHAP bat, rat, gardening and island leasee training. When speaking to those who had participated in IHAP training we solicited feedback on the quality and practicality of the training received. From those who had not participated in any agricultural training we sought comment on the reasons for their non-participation. From both groups we tried to draw comments that would increase our insight into the role agriculture plays in the island communities.

Overview

The Maldives has traditionally been a fishing-oriented society. As such, agriculture has played a minor role in employment, income generation and food production. Raa Atoll is no exception to this pattern. Though the islanders do exploit the agricultural resources of their islands: particularly coconut, screwpine, breadfruit, bananas and various leaves, used in garnishes and curries, they tend to "pluck and gather" rather than cultivate. The cultivation that does take place is almost exclusively in the hands of women as men have traditionally pursued fishing for the family's food and income needs. Women supplement the limited diet "plucking and gathering" provides by gardening.¹ Through many years of role reinforcement, men have come to look down on cultivation as "women's work" and as "unpro-

1. Millet, sorghum and maize are grown erratically on 3 islands in the Atoll, but are not consumed as part of the daily diet, even on those islands. (Baseline Study, p.15).

fitable". There is little appreciation in the Atoll for the potential benefits from increased involvement in agriculture. This has made IHAP's work very difficult. Islanders are discouraged from cultivating by poor soil, erratic rains, lack of markets, unavailability of transport to move their agricultural surplus and pest infestation - primarily rat, bat and black beetle.

Project Targets

The original components of the IHAP agricultural initiatives were: a rat control program, a vegetable garden project, a reforestation project, and the hiring and training of two agricultural extension agents (P.P., pp.3-4). In the extension proposal only two of these components were still being supported by IHAP, rat control and vegetable gardening (B.P., p.9).

Agricultural Extension Training

The agricultural extension agents that IHAP hoped to hire could not be trained as planned according to the project managers (QPRI, p.10), because the Agricultural Training Center was not yet fully established and able to provide adequate training.

They hoped to minimize the negative impact on agricultural sector initiatives resulting from not having these two extension agents by making preliminary plans for the provision of short-term training at the Raa Atoll Training Center. This training would be undertaken with the help of the Ministry of Agriculture (MOAG). A MOAG field officer did visit Raa periodically and made valuable contributions to the rat and bat eradication training (described below) as well as the planning of a women's gardening course. A second field officer led the school garden course and came to the atoll with the intention of leading the August

1984 women's gardening course (though the course was ultimately postponed due to the inability of the project managers and the field officer to come to agreement on the course content and method of presentation). Bonnie and Peter, as well as the NOAG, clearly made genuine efforts to arrange for the services of two agricultural extension agents to the atoll, even if two people with that designation could not at that time be physically placed in the Atoll on a permanent basis (NOAG had no such people available).

If the two NOAG field officers assigned to Raa Atoll during the life of the IHAP project were qualified to provide technical assistance and conduct training, they were presumably trained themselves. Neither NOAG nor the project managers address this issue. Perhaps two individuals selected by IHAP could have been trained wherever these two had received their training.

Upon visiting the Feridu Island Agricultural Training Center² in Autumn of 1982 the project managers remarked that not only was training "fairly well organized by an enthusiastic group of young Maldivian field officers" (QPR3, p.9), but that four men from Raa were being trained at the time. Though these four men were not recruited by IHAP, the project managers made plans after their visit to this Training Center, to use their newly-acquired skills at the completion of their training.

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2. The same center they assessed earlier (QPR1, p.10) as not being able, at that time, to provide adequate training to any nominees IHAP might send there. It should be noted that they did not indicate at that time on what information they based their assessment, as they do not report ever having visited the center prior to arriving at their original conclusion.

The project managers should have been alerted of the nomination of people from Raa Atoll for the Feridu Island training before the fact. In addition, it might have been possible to have sent nominees from Raa to the Training Centre sooner. Monitoring of the improvements of the Centre's capabilities should have been undertaken and documented.

The MOAG has claimed that the reason no agricultural extension agents were trained was that it would be impossible to absorb them into the staff.³ The original project proposal clearly places responsibility for the training of two agents with the MOAG (P.P.,p.19). By the GRM approving the original proposal, MOAG also became bound by the following: "The MOAG will provide for these individuals' salaries and support at the conclusion of the project". (P.P.,p.4). The GRM as signatory to the project proposal should inform all affected government organizations of the specific implementation responsibilities outlined in the project proposal. These organizations must then act in good faith to carry out the terms of the proposal. In the case of the MOAG, there is some controversy as to where the blame for implementation oversight should be placed. We recommend as a general practice, that the GRM make greater efforts to ensure full dissemination of project responsibilities to the implementing agencies within the government. At the same time, implementing agencies such as MOAG should conscientiously provide all

3. Interview with Abdul Azeez, MOAG, 6 February 1985, Male.

support stipulated in project proposals.⁴

Reforestation

The extension proposal makes no mention of activity in the area of reforestation. As the project managers clearly document their efforts in reforestation throughout their Quarterly Reports and reforestation activity continued up to the end of the project, some reference should have been made to this activity. The anticipated measurable outputs which should have been included in the extension proposal are:

- 3,000 casuarina seedlings distributed to islanders
- leased island tree survey performed and report written
- successful establishment of casuarina, ipil ipil and jak seedling nurseries

Using these targets, half the casuarina seedlings are in Ugoofaaru being tended while the other half are in a MOAG warehouse in Male' awaiting departure of a vessel with sufficient carrying space to permit transport. The details for distribution at the island level have not yet been worked out.

4. The MOAG diU provide some support from its existing staff to Raa Atoll, but the very fact that its agents were not always available when the project managers needed them suggests that more agents could have been easily absorbed and put to use assuming funds were available. MOAG should have more aggressively attempted to train two agents who would have been assigned to exclusively support the IHAP project. Their presence could have helped the agricultural awareness-raising with which the project managers were having such a difficult time and could have provided valuable follow-up throughout the Atoll. Instead this follow-up had to be neglected due to competing demands on the project managers' time from other activities.

A survey of fellable trees on leased islands was successfully completed and the resulting short report has been adopted by MOAG for distribution nationwide. It should be noted though, that the survey did not ultimately include community participation (in the form of island leasee contribution to the efforts and "volunteers" selected by the RADC) as intended but was carried out by a team consisting of a MOAG representative and various island katheobs and assistant katheobs -- the direct beneficiaries (the leasees) and the "volunteers" were not interested enough to get involved.

Seedling nurseries were set up as planned. One suffered from bad seeds resulting in a 0.1% germination rate (QPR 2,p.12). The others have produced only stunted saplings that died at an abnormally high rate.

Bat Eradication

Though mentioned only in passing in the project proposal, bats were considered a "true dilemma" (Baseline Study,p.15) by many islanders. Unlike with rats, it was not possible to have an effect on bat damage through measures taken in the home. Bats move from tree to tree living on just-ripening fruit. Protection of fruit, usually by encasing them individually in the hollowed halves of old coconut shells, is very time consuming and is dangerous in the weak upper branches of trees that bats prefer.

Based on experience in Central Africa, Bonnie knew that the sling-shot could be used to effectively engage targets at great distances and thought this technology might be appropriate in the Maldives for use against bats. With the assistance of MOAG, 35 sling-shots with pellets were ordered and delivered and two training courses, providing hands-on opportunity to improve sling-shot accuracy, were held for different groups of islanders in June and August 1984 respectively. The training courses stressed the need for the participants to practice regularly for 2 months

with their sling-shots to acquire the proficiency needed to successfully kill bats. Subsequent inquiry confirmed that this was not done.

Conceived of as an experimental program from its inception, the bat program was a failure, due to bat-killers' unwillingness to take practice seriously. The reason for this was stated to be dissatisfaction with the ammunition. We feel that a more serious and perhaps innovative attitude among the participants in the training, substituting more appropriate projectiles and practicing more diligently could have at least produced expert sling-shot marksmen.

Whether this would have, in fact, led to any appreciable reduction in the bat population, is open to speculation. Some of the participants claimed that the sling-shot was effective at scaring off the bats (QPR 10,p.10). This is not a solution. The bats will simply move on to another tree and return to the "defended" tree at a later time.

Bonnie and Peter did contact an appropriate technology resource center in Washington for advice on the bat problem, but were unable to acquire any useful information.⁵

5. 1 possible method of eradication, popular in Honduras, where similar bat problems exist, involves application by dusting or spraying of a powder whose effect wears off within several hours of exposure to open air, (thus minimizing the toxic effects of the powder to humans and other animals) but not before the bats, to whose fur the powder adheres, have carried each other (this is their normal method of hygiene, much like kittens). This licking of one bat's fur by another leads to consumption of the poison powder and subsequent death. (Interview with Kyshia Whitlock, Tóla, Honduras, August 1984).

Though bat eradication was a low priority, experimental activity, both MOAG and IHAP pursued it with interest and thoroughness. Any later follow-up which may require efforts more on the scale of the rat eradication programs to achieve success, will be able to draw on the experience gained in the bat experiment, and documented in the IHAP Quarterly Reports. Such follow-up should address the technological issues involved in fruit-tree protection at the same time, and should study examples from countries where bat is killed and consumed to see whether the addition of bat to the island diet was viable in the Maldives.

Rat Eradication

The rat eradication program was the most successful element of the IHAP agricultural sector activity. In 2 training programs, 12 and 24 people were instructed in rat eradication techniques.⁶ Community awareness of the linkages between rats and crop damage, disease transmission, and non agricultural property spoilage was heightened. The islanders set targets and mobilized resources to meet the targets (which included rat tails collected, rat traps laid, and trees protected). Significant reductions in coconut loss due to pests were reported, and on 3 islands the residents pooled funds to buy rat poison on their own after having evaluated the cost of additional poison and the benefits to the community of a rat-free environment.

At the beginning of the project Bonnie and Peter commented that the islanders spoke strongly about the damage rats were causing. The comments added that the islanders were unwilling to do anything about this. We can say that this attitude changed to some degree during IHAP's involvement

6. IHAP/Raa, Program Sheet : Human Resource Development prepared for the evaluation team, February 1985.

in the atoll. The rat eradication programs tended to be orchestrated by one or two committed individuals. These leaders were able to successfully use the Island Development Committees as vehicles to generate interest and to provide a focus for mobilization of community resource. This was particularly important since the Committees did not usually feel that they should take the initiative in, for instance, buying poison. They preferred to assume passive roles - responding to interest generated from the community itself.

This example of community attitude change may be a superficial indicator. Ronnie and Peter phased the rat-eradication program in such a way that islanders would have to learn to clean their homes and trees, remove or seal household items that would attract rats, and trap rats before being provided with poison. Once the islanders saw the rapid impact of the poison, particularly when contrasted with their much slower yielding pre-poison initiatives they voiced strong preference for poison at the expense of the early steps that ultimately made the poison effective. This indicates that the islanders have not understood the logic behind the rat eradication program. Their attitude has not changed from corrective to preventive. On the other hand, 3 years ago, islanders merely complained about rats, now they know that a poison exists that can kill them. They know how to lay the poison and they are prepared to raise money among themselves to purchase it. Though understanding of all the linkages in the rat program does not yet exist community-wide, these are indications of some program success. Rats are being eliminated, and through a community-based effort. For these reasons the rat eradication program was a worthwhile exercise.

A complicating factor in the rat program is that it will, in fact, not be possible for the islanders to continue to purchase rat poison. The project managers have been unable to convince any Male' businessmen to agree to import

rat poison (the initial shipment was achieved through special arrangement).⁷

What this means for the islander in Raa Atoll is that (s)he will be unable to purchase poison. Other measures are insufficient to totally rid the island of rats. There is no way to predict what will happen to people's willingness to continue their fight against rats in the absence of future access to poison. Resolution of the issue is complex. The most direct solution is for the MOAG, if it is going to permit rat poison to be used in the atolls, to convince the Customs Office to streamline procedures for its import, thereby making the product more attractive to merchants. The risk of slow inventory turnover (and spoilage) can be minimized by small stocks being held at first. As promotion and interest in the atolls increase demand, stocks can be expanded. Islanders must be prepared to pay the market price for the poison. Initiative in rat eradication should continue to come from the islanders, but the MOAG should respond to requests for assistance in procurement and Customs clearing to the best of its ability.

7. The "red tape" involved in importing the poison is not compensated adequately by the price a business person can charge. Because the product is slow-moving the merchant is pressured to lower prices, reducing profit, just to move the merchandise off his shelves. At the same time, the merchant is pressured into charging a high price to recoup the inventory carrying costs that slow moving goods incur, but at high prices, the poison will not sell! As the poison sits on merchants' shelves its rated shelf-life (short for rat poison) expires, leaving the merchant with worthless stock.

Interest has been fairly high in rat eradication in Raa Atoll. The obstacles to sustainability are in part external to the islands and the islanders, and can be overcome. In contrast, IHAP has tried to encourage other agriculture-supporting activities, notably gardening, that exhibit much less short-term promise of success.

Gardening Training

Gardening skills have proven exceedingly difficult for the IHAP project to have any impact on. The project managers' commitment to gardening training remained strong throughout the project though the results do not reflect this. Reading through the project documents, we could not help but feel that for some reason gardening was "jinxed". The IDC's were dominated by non-agriculturally oriented males who did not identify agricultural problems as "felt needs" during the needs assessments (QPR 2,p.12). The Peridu Island Training Center and the IHAP Gardening Course for school staff and island leasees attracted only men, though women are the traditional agriculturalists. Women's groups claiming to have problems with agriculture were unable to commit themselves to doing anything about these problems (they could not even agree to accept IHAP technical assistance and tools). Gardening training sessions were postponed due to instructor non-availability. Volunteers to the womons' gardening course backed out of their promises to attend. One gardening course instructor, as a result of differences of opinion with Bonnie and Peter, refused to hold a training course as scheduled. Follow-up to another gardening course was poor, with many gardens quickly abandoned and others never planted.

The project managers were insightful in their analysis of the reasons for the failure of gardening programs. They attributed the failure to :

- lack of leaders
- lack of interest
- the wrong mix of participants at courses (a reference to the domination of courses by men)
- women not wanting to leave their islands for training elsewhere
- a limited number of islanders willing to view agriculture as a full-time occupation
- the inadequate allocation of their time to gardening awareness-raising
- their own lack of technical expertise
- the unwillingness of Island Offices and Women's Committees to give encouragement to women to pursue gardening activities and to ensure that those who had made commitments in principle to attend training, did in fact, attend (QPR 6,p.8. QPR 10,p.10 and QPR 11,p.12).

The project managers and MOAG both worked diligently to address these reasons for failure. After the first gardening course attended exclusively by men, renewed effort

was made to specifically involve women in this activity.⁸ The ultimate failure of this initiative was the result of a combination of several factors including project manager involvement in other important activities in the critical weeks immediately preceding the women's training. The inability of the project managers to work cooperatively

8. It should be explained that initially there was no expressed or felt community need for gardening training and Bonnie and Peter decided not to pursue it while awareness and interest remained low (QPR 2,p.12). In March 1983, quite apart from gardening training, but still as part of their effort in agriculture, Bonnie and Peter sponsored a seminar for island leasees. This seminar was well attended and deemed successful by the attendees (all men), who recommended that a follow-up to the seminar be made in the form of a gardening course (QPR 4,p.12) This was the indication of "felt need" that Bonnie and Peter had been waiting for and within 3 months they had put together a gardening course focussed on the constituency that had expressed initial interest, all of whom happened to be men. The only other people who had shown any interest in gardens were school staff. They too were invited to participate in the training and they too happened to be all men. Immediately after the course, the fact that the desired attendees (women) had not attended the course was noted (QPR 6,p.8). In spite of continued lack of expressed interest, the project managers began planning soon thereafter, for a backyard garden training course for women (QPR 7,p.9).

with the NOAG field officer assigned, in August 1984, to conduct the gardening training, and project managers' commitment to trying to involve others with greater technical expertise in the conduct of the gardening training, even though such people were not readily available.

As the project drew to a close the managers assessed that too little time remained to make any lasting contribution to gardening skill enhancement. Though the insights gained into the culture through attempts to generate interest in gardening may have been of some benefit in other project areas, they did not help to directly improve awareness of, or skill in, gardening.

Conclusions

Agriculture, as a major project area of attention, was not improved significantly by IHAP's assistance in Raa Atoll. The felleable tree survey, though successful in output fell short of participation expectations. The rat eradication program has made a significant short-term contribution to almost all the islands. The project managers calculate 7,711 islanders (69%) to have directly benefited from the rat eradication efforts. Homes have been "rat-proofed", islanders are more conscious of the need to "police" those areas where rats hide, such as garbage pits and inside the dried leaf debris of the coconut tree, coconut yields have improved⁹ and more importantly, some islanders have become encouraged to undertake new plantings in response

9. One island (the only one for which quantitative data are available) reported a Rf. 40,000 gain in coconut revenue due to lowered rat loss (QPR 7,p.9). Racumen poison costs \$ 7.50/ton. 250 kg would have been given to this island at a cost of \$ 206.25. Rf. 40,000 - \$ 5,714, so the return on investment (excluding labor and transport of poison) was 27 times the cost of investment.

to the perceived lowered risk from pest destruction.¹⁰

Still, discussion and visual inspection lead us to conclude that an attitude of constant vigilance has not been instilled in many of the islanders. Public attention to the rat issue will wane, rats will return, and a new eradication campaign will be necessary. Such a campaign should be better organized and more successful than earlier ones because of the experience the islanders have gained through IHAP's and MOAG's assistance. This in itself is a positive result. Sustained interest in preventive measures, with the exception of poison, which may not be available in the future (for the reasons mentioned earlier in the chapter and because of MOAG's caution about poorly-understood potentially harmful effects to the eco-system)¹¹ will probably not continue in earnest after the conclusion of the IHAP project unless islanders have the will to sustain the present momentum of rat control activity and MOAG responds with program encouragement and assistance.

No trained agricultural extension workers exist in Raa Atoll who can act as catalysts to raise agricultural awareness and address peoples' specific questions. This should be rectified by MOAG hiring, training and assigning to Raa Atoll 2 agents as stipulated in the original project proposal.¹² These agricultural extension officers should acknowledge the dominant role of women in any agricultural sector development strategy, and be sensitive to specifically encouraging women's potential in this sector.

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10. Interview with Peter Buijs, 7 February, 1985, Male
 11. Interview with Mr. Abdul Azooz, MOAG, 21 January, 1985, Male.
 12. See Chapter II for our discussion of the binding nature of the original project proposal.

The seedling nurseries have been plagued by poor seed quality and lack of attention from technically competent agriculturists. Further efforts in this activity should be deferred until a trained agricultural officer is resident in the atoll to supervise such seedling nurseries.

After an initial successful island leasee seminar, no further seminars were held though keen attendee interest was expressed in follow-up (QPR 4,p.12). Some of the issues planned for discussion in a follow-up seminar were dealt with in other activities; specifically gardening and reforestation. Nonetheless, island leasees represent the only identified special interest group in the atoll with a stated concern about agriculture. Their interest should be nurtured and responded to directly whenever possible. MOAG may find it advantageous to offer programs for island leasees nation- or region-wide, as similar concerns undoubtedly exist outside Raa Atoll, and the revenue to the government from increased tree tax collections (which would result from improved reforestation) would more than cover the cost of follow-up gardening, black beetle¹³ and particularly, reforestation and coconut rehabilitation¹⁴ seminars. Related to this,

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13. In another unfortunate blow to IHAP's agricultural initiatives, the individual selected by IHAP for black beetle control training in Neem Atoll, was informed at the conclusion of his training that the black beetle eradication program, originally designed to include Raa, would not extend to Raa. This was demoralizing to the individual and a loss to the Atoll which suffers from high levels of black beetle infestation.
 14. The highest priority area for attention identified in the World Bank study on the Maldives (1979).

the GRM should re-think its overall island leasing policy, particularly regarding lease holding periods. The uncertainty of lease renewal and short duration of leases forces leasees to maximize short-term economic gain, to the detriment of balanced and well-planned agricultural development.

In vegetable gardening emphasis may have to be placed on the income, rather than the nutrition aspects of gardens. IHAPs commitment to the latter may have been short-sighted.* Stressing income generation would have supported one of the project's stated purposes and could have led to increased expenditure over time on more and better food (though our visits to the islands of the atoll confirmed that this does not occur in the short run).

The approach of raising nutrition levels through emphasis on gardening has not been successful though a number of stimuli have been used (newsletters, incentives of tools, mapping of individual garden areas, provision of seedlings, offering of training courses). An alternative would be to focus on tree crops. The labor intensive attention required of garden and field crops is avoided and food availability is increased (coconut, screw pine, banana and breadfruit, particularly). In addition, incomes will rise, primarily through timber sales.¹⁵

15. Tree crops, due to their deeper and more extensive root network, have better access to groundwater than other kinds of crops and are thus less susceptible to drought loss. The very contamination from human wastes that makes the ground water of the islands unsafe for drinking, is the source of rich nutrients for tree crops.

* See last page of chapter four dissenting comment.

The MOAG should study strategies for optimally mixing fruit and nut bearing trees with lumber and erosion-reducing tree varieties. Such a study should include examination of long-term demand for different woods as timber and firewood, protectability of fruit trees from pests, policies for wood like kando,¹⁶ and coconut felling policies taking into account the fact that islanders are reluctant to fell "bad" trees.¹⁷

A wide-ranging study of agriculture should be undertaken to focus government, and ultimately, islander, attention on the most important problems and opportunities in this sector. This study should use a farming systems approach.

These recommendations, if acted upon, should greatly increase the benefits that will accrue to Raa Atoll from agriculture. Growing population putting pressure on traditional island food resources, and changes in the economics of the local fishing industry will make it especially important for these recommendations to be acted upon.

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16. Desirable for poles when young, due to its flexibility and resilience, and for boat keels when mature due to its density and strength.
 17. Though such trees are a liability standing, they are often poorly grained, rotten or otherwise unacceptable for use once cut and are thus considered a greater liability felled than standing.

Dissenting Comment IV.1

(Dr. Nott) I disagree concentration income-generation to the neglect of nutrition is shortsighted. Experience elsewhere (much of Africa) has been that focus on cash crops has resulted in the malnutrition, and even famines, that have developed. Nutrition education and income generation must progress hand in hand, with cash crop production (especially if it gets taken over by men) not being allowed to forge ahead.

V. EDUCATION

Method

The evaluation of achievements in the Education sector of the project began with a careful examination of the project proposals (original and extension), the mid-term evaluation and the project managers' quarterly progress reports. This was complemented with island interviews of 19 Katheebis or Assistant Katheebis (whichever were available) to discuss the initiation, construction and operation of the schools, particularly with a view to assessing the likely future sustainability of school operation and maintenance. In addition, the same issues were independently discussed with one or two members of the Island Development Committee on each island (29 in total). The likely impact of the school construction and teacher training activities on teaching quality was assessed by interviewing participants in the various teacher training courses organized by IHAP. Those interviewed included 6 participants in the refresher courses in preparation for the Educational Development Center (EDC) teacher training, 6 participants in the principal teacher seminar and 11 participants in the teacher workshops (a total of 16 teachers).

Overview

The original project proposal does not explicitly include education among the areas in which the project is "to supplement and complement the development efforts of the government and United Nations Agencies" (P.P.,p.3). But it does identify schools under the umbrella of the types of social services which the government wishes to support in the islands (ibid.,p.2). It envisages project "support for traditional schools" (ibid.,p.16) in the form of "upgrading" of school facilities and provision of textbooks and teaching supplies. By specifying physical assistance for schools, the P.P. gives a narrow scope to educational assistance. It does not consider the training requirements which may be associated with improving the quality of teaching

and learning in the islands. However, the proposal also leaves the door open for additional support to education in the statement that:

As the proposal unfolds people's interest may generate more support in one component than in another and the project manager may have the prerogative therefore to emphasize certain sections over others" (ibid., p.24).

The "Other Activities" Budget Line

Before discussing the project's activities in education further it should be noted that "Project Development (Experimentation)" and "Island Sports Equipment" were included with "support for traditional schools" under the "Other Activities" budget line in the P.P. The inclusion of those components in the project was an imaginative feature of the proposal. However in the course of project implementation, the managers became too caught up in their other activities to dedicate much effort to the non-school components of the "Other" line. Lobster raising, improved wood burning stoves and fish rafts were listed as possible areas for experimentation in (QPR 1., p.10), but lack of local interest, and technical and marketing problems led the managers to abandon pursuit of these ideas.¹ An effort to collaborate with an FAO expert on a solar salt experiment failed to yield results. However, the testing of an experimental single dwelling rain water collection jar, the bat control program and the progressive development of the Maldivo Ash Toilet were justifiably cited as experimental efforts (QPR 8., p.18).

Virtually no contribution was made to sports equipment. The managers were correct not to dedicate any resources to this area, as islanders appeared willing and able to support sports on their own.

1. Although a fuel-efficient cook stove was installed in the new hospital.

Education As A "Felt Need"

Through their baseline and needs assessment surveys the project managers arrived at the conclusion that, within the range of activities that the IHAP project was in a position to assist materially,² islanders assigned greatest importance to education.³ On the other hand, they needed more "awareness raising" prior to the introduction of activities anticipated in health and agriculture. The managers therefore decided to provide immediate assistance to school construction as part of a strategy of tackling "felt needs" first. They thereby hoped to open the door for the introduction of activities which would otherwise have met with complete lack of enthusiasm, if not open resistance (QPR 2, p. 15).

Consistent with their philosophy of community participation in development, the managers worked with the Island Development Committees to arrive at an understanding of the practical implications of constructing a new island school. Among the considerations discussed were:

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2. It has been argued that IDCs specified school construction as a priority activity only because they recognized that the project managers were unwilling to help them with other projects (such as mosque construction, installation of "flush" toilets or harbour deepening) which the islanders would have preferred. Be that as it may, the selection of school construction as a priority represented a valid compromise between the islanders' self-perceived needs and the project managers' mandate as outlined by the project proposal.
 3. Eleven out of sixteen islands specified "education" as their priority need. Among the five remaining islands priority was given to "public business", (2) "harbour" (3), "water supply" (1), "latrines" (1), "mosque" (1) (three islands specified more than one priority need) (Eight months P.P., p.8). An Overseas Development Institute report supports the strategy selected by the project managers: "in primitive customary communities with a distinctive social organization, it may take some time to identify an area of activity where easy improvement is possible with minimal affront to custom. This may not even be agricultural at all (e.g. drinking water, health, fencing against animals, etc...)." (Hunter, G. 1978, Agricultural Development & the Rural Poor (London: Overseas Development Institute), p.36).

the capacity required to accommodate future increases in pupil numbers, the resources (materials, labor, cash) required for school construction and maintenance, the division of contributions between the islanders and IHAP for school construction, and the need not only for a structure but also for a qualified teacher. The managers therefore not only provided technical and material assistance for the construction and furnishing of schools,⁴ they also supported the improvement of the quality of the teaching which would be available in the schools. By involving the Island Development Committee in the planning process the managers hoped to improve the members' skills in decision making for community development.

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4. In addition to preparation of the school construction plan and technical advice on construction procedures and techniques, IHAP provided the following materials:
1. Cement for foundation
 2. Cement for roofing
 3. Cement for flooring
 4. Steel for foundation
 5. Steel for roofing beam
 6. Timber for roof structures
 7. Timber for doors & window frames
 8. Timber for furniture & dividers
 9. Galvanized iron sheets for gutter making and roofing
 10. Nails, bolts & nuts for roofing

The island public contributed the following:

1. Coral sand and lime
2. Roofing rafters
3. Freight & transport of materials to the island from Malo.
4. Gutter making and fixing
5. Timber for half the furniture and dividers
6. Labor for furniture and divider construction
7. Labor for all construction, roofing plastering & flooring of school building.

Cost of school construction (per school)

Large School (70'x24')	<u>IHAP</u>	\$3,700	<u>LOCAL</u>	\$2,850	<u>TOTAL</u>	\$6,550
Small School (60"x24")		\$2,800		\$2,000		\$4,800

(Project managers' calculations.)

The mid-term evaluation gave its approval of the activities and progress in school and Raa Atoll Training Center construction and training activities. It concluded that "the recurrent costs will be manageable if some assistance is available from the Ministry of Education with regard to training of teachers and obtaining text books". It also observed that "the training center will have to count on coordinated assistance from the relevant Ministries and Departments to provide the appropriate training courses (Mid-term Evaluation, p.13). So far such assistance has not been apparent.

Schools

Tables V.1-V.3 summarize the project's achievements in school construction and furnishing and in formal training. These achievements are compared with the quantified targets set in the Extension Proposal. On the whole the performance has been commendable, with more than 89% achievement in all areas except completion of school furniture construction. Provision of school furniture has encountered some logistical⁵ and administrative⁶ problems which should be sorted out by the time the managers leave. The occurrence of these problems reflects the variability from island to island in the Katoobs' ability to command and manage the support of their islanders. This variability will no doubt also be reflected in the future management and maintenance of island schools.

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5. Difficulties with organizing delivery of materials.
 6. Some Katoobs have mismanaged the acquisition of materials and organization of islanders for the task.

Table V.1: Education & Training Targets & Achievements Through 2/85

<u>Activity</u>	<u>Unit</u>	<u>Target</u> ^a	<u>Achieved</u> ^b
- Island School	New Buildings completed	11	10
- School Furniture	Furnished Schools	11	4
- Trained teachers/ teachers in training	Placed/in training	8/3	9/2
- Training Center	Buildings completed	2	2*
- School enrollment**	Children age 6-15 enrolled	1357	1205
- Formal Training ^c	Persons/Courses	250/20	243/22

* although plastering still to be completed by Atoll office.

** note: School enrollment not synonymous with school attendance.

Table V.2: Status of School Construction^b

	<u>Number of Schools</u>
In Use	10
Construction Halted ^d	1
<u>Construction Started</u>	<u>1</u>
Total	12

Table V.3: Status of Furniture Construction^b

	<u>Number of Schools</u>
Completed	4
1/2 - 3/4 Completed	4
Less than 1/2 completed	2
<u>To be Started</u>	<u>1</u>
Total	11

Source: ^a E.P., p.10.

^b Project Manager/Visual Inspection.

^c See Appendix 5 for details.

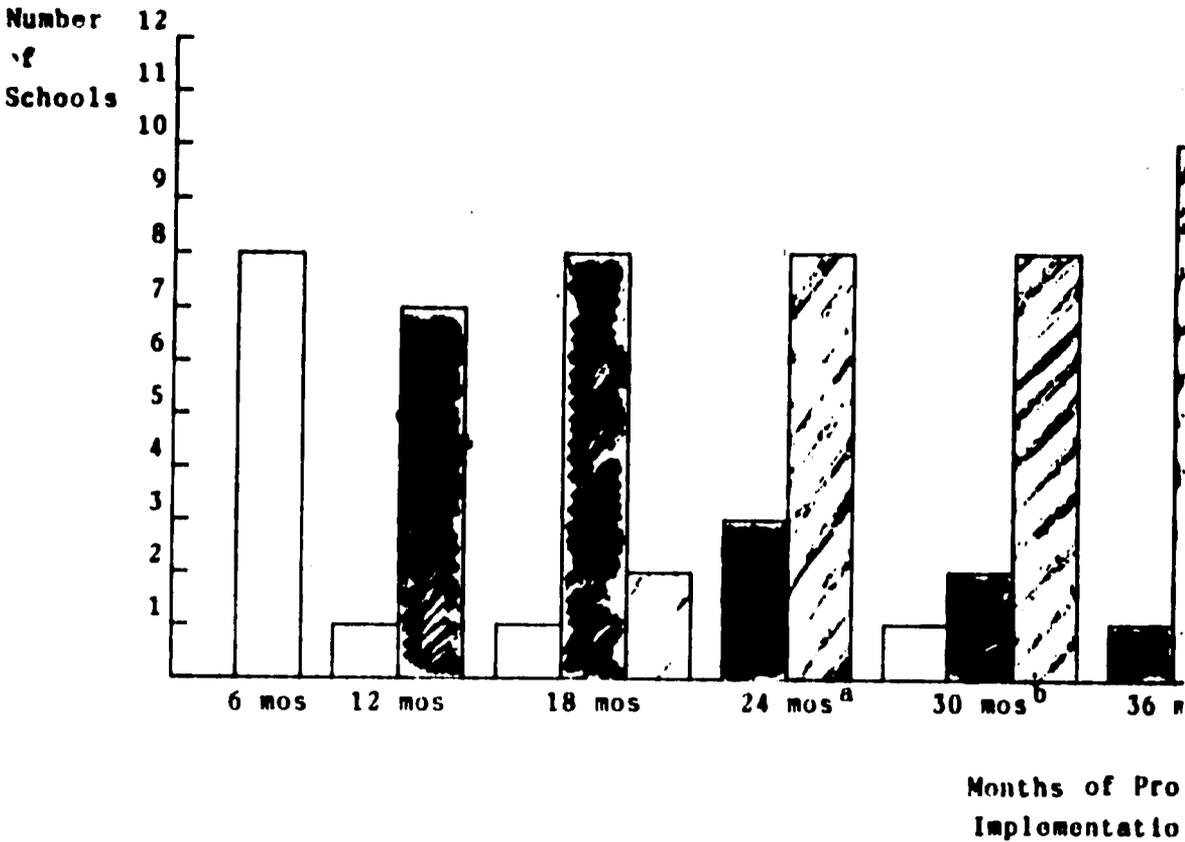
^d Reason for this is discussed below.

Graph V.1 illustrates the rate of progress achieved in school construction in the course of the project. It indicates that, from the date of commencement of the program, 6 months were required to reach agreement on school construction as a priority activity. During the following 6 months the first surge in construction activity took place. Thereafter, it took an average of 6 to 12 months for islanders to complete the construction of their school. Bearing in mind that islanders undertook this labor on a "voluntary" basis and had to fit it in between their regular subsistence activities, this is an acceptable rate of progress. It is a good indication of construction rates which can be anticipated for other similar activities elsewhere in the Maldives. As in all similar ventures, there have been laggards and problem islands. Thus one island⁷ only decided to commence school construction 30 months after the project started. Another island⁸ chose not to consult the project managers on positioning of the school and sited it too close to the island mosque. The islanders assumed that the mosque would be demolished and the rafters would be salvaged for use in the school roof. All construction work was halted when the government did not give its approval for the mosque to be torn down.

Table V.4 summarizes the IHAP contribution to "supplementing and complementing" GRM provision of schools. At the time the project commenced there were 8 schools in permanent buildings (of which 4 buildings were "old") and 10 schools in temporary makeshift accommodation. Only 4 islands had a satisfactory school building. By the end of the project fourteen islands will have

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7. Kinolhas
 8. Mankurathu

Graph V.1: Progress of School Construction Through Time



-  Need Identified
-  Under Construction
-  Construction Completed

(Source: Quarterly Reports)

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- ^a - Construction on Maakurathu halted due to problems of School location
 - ^b - Kinolhas school agreement negotiated
 - Maakurathu school construction still halted.

Table V.4: Comparative Status of School Buildings: 1982-1985

<u>Island</u>	<u>Number of School Buildings by Type</u>			<u>Classroom Floor Area</u>	
	<u>1982</u>		<u>1985</u>	<u>1982</u>	<u>1985</u>
	<u>Perm.</u>	<u>Temp.</u>	<u>Perm.</u>	<u>Sq. ft.</u>	<u>Sq. ft.</u>
Alifushi	1		1	NA	NA
Vaadho		1 ^c	✓	300	1,400
Rasgatheem		1 ^c	✓	1,000	1,400
Angolitheem		1 ^{ov}	✓	160	960
Gaaundudu		1 ^{ov}	✓	225	960
Ugulu	1	1 ^{os}	✓	368	1,440
Ugoofaaru	1 ^{os}		✓	756	1,440
Kandholhudhoo		1	1	NA	NA
Maakurathu	1 ^{ob}		UC	500	1,440
Rasmadhoo	1 ^{ob}		✓	525	1,440
Innamaadhoo		1 ^{os}	✓	300	960
Maduwari	1		1	NA	NA
Iguraidhoo		1 ^c	✓	600	1,800
Fainu		1 ^c	✓	300	960
Moodhoo	1	1 ^{home}	1	NA	NA
Kinolhas	1 ^{os}		UC	400	960
TOTAL	8	10	14	5,434	15,240

- c Cadjan
- ob Old building
- os Old store
- ov Office veranda
- ✓ IHAP School
- UC IHAP School under construction
- NA Not Available

Source: Baseline Survey Table 5 and Appendix 5.A of this report

a satisfactory school building and 2 islands will have an improved school under construction. The IHAP/islander schools will have nearly trebled the classroom floor area on 12 islands. One of the striking features about the IHAP schools program is the fact that all members of the community, women and men, regardless of their socio-economic status, felt that they benefited from it. Improved access to a better education represents increased opportunities for the whole community.

Unfortunately complete and comparative school enrollment figures are not available. However, for the school year commencing February 2, 1985, an 89% school enrollment rate among children 6-15 years of age has been estimated for the 12 islands where IHAP schools exist (see Table V.1).

Teacher Training and Adult Education

IHAP assisted in the training and/or placement of trained teachers on 11 islands. The managers organized two refresher courses to assist Raa applicants pass the entrance exams for EDC teacher training. IHAP paid half the money for 2 Atoll residents to attend the teacher training course in Male.⁹ The managers also attempted to promote

Table V.5 : IHAP Courses for Teachers in Raa Atoll

<u>Course</u>	<u>No. of Days</u>	<u>No. of Courses</u>	<u>No. of Islands Represented</u>
EDC Refresher No. 1	4	4	3
EDC Refresher No. 2	6	7	6
Teacher/Principal Seminar	3	15	13
Teacher Workshops	4	19	13

9. The students paid the other half.

continuity and quality in teaching in the island schools by obtaining Ministry of Education agreement to assign trained teachers from Raa Atoll to their home island.¹⁰ Table V.5 summarizes the courses organized by the managers at Atoll level which were directly related to improving the teaching quality in the island schools.

The additional training received by teachers appears to have made a positive contribution to teaching quality. Schools were not in session at the time of the evaluation, and it was therefore not possible to make a classroom assessment of teaching performance. But the majority of the teachers interviewed felt that they had benefited from their additional training. Among the areas where they felt more skilled were classroom and student management, understanding and communication with parents, and use of practical demonstrations in teaching. Many of them noted a change in their approach to teaching, with less emphasis on memorisation¹¹ and more emphasis on teaching students to understand what they are learning.

The education-related courses initiated by the project managers were part of a formal adult education program designed to complement other project activities. This program has been ambitious in its scope. The coverage and impact of courses designed to support the health, agriculture, income generation and CBIRD activities of the project are discussed in the relevant chapters of this report (Appendix 5.B gives a complete tabulation of courses, numbers of participants, etc.).

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10. This has not been MOE policy in the past.
 11. Traditional schooling in the islands has centered on memorising and being able to recite the Koran in Arabic. In the past more importance has been given to accurate repetition than to understanding of what was being said.

Raa Atoll Training Center

For the most part these formal training courses took place in the IHAP/Raa Atoll sponsored Raa Atoll Training Center (RATC). Early on in the implementation of the project the managers justified the creation of the RATC as a way of meeting the need for suitable accommodation for Atoll level adult training (QPR 2., Annex 1 .p.2). However, unlike the schools, which were initiated and constructed at island level, this activity developed out of an agreement between the project managers and the Atoll Chief.

Delays experienced in the completion of the RATC led the project managers to make the valid contrast between the rate of progress on the "bottom-up" initiated schools and on the "top-down" initiated RATC (QPR 3.,p.13). Progress of work on the buildings and supply of the furniture depended on the Atoll Chief's ability to muster support from the Raa Atoll Development Committee (RADC). But the RADC was not involved in the original decision to undertake construction of the RATC, and it never lent its full support to the undertaking. Work on the buildings consequently progressed much more slowly than had been anticipated by the managers. Although some of the rooms started to be used in the 4th quarter of the project, by the time of the evaluation mission, over two years later, plastering had still not been completed. The managers felt compelled to make a private contribution of materials for guest room beds and chairs to compensate for the islanders' failure to meet the commitment made on their behalf by the Atoll Chief (QPR 7.,p.6). Concrete plans have not yet been drawn up for the future management and maintenance of the RATC by the RADC.

Impact and Self-Sustainability

The new schools, the better trained teachers, the increased stake that the island communities now have in

education infrastructure, should all contribute to an improved quality and level of education in Raa Atoll.

In addition to direct benefits for the education of children, the IHAP education activities can be expected to have an indirect impact on the other project purposes. The participation of the Island Development Committee in decision making regarding school construction and operation does appear to have provided the members with useful experiences which may make them more capable and dynamic in the future. The trained teachers have been among the most articulate in expressing their understanding of the means and benefits of eliciting community involvement in development activities. Their presence on the islands should improve the chances that the lessons learned from the IHAP project will continue to be applied.

The schools themselves will offer a venue for adult education in a range of subjects, which should include health, nutrition, agriculture and income generation. They should also be used for community meetings and for social/cultural events, such as the Maaulloodhu.¹² Another benefit derived from the school construction has been the skills acquired by the construction workers in the new building methods used for the schools. The roofs of the schools have also provided useful surface area for collection of rain water for the island tanks.

It is still too early to see whether there has been a permanent improvement in the level of skills and knowledge in Raa Atoll. It is also not possible to demonstrate that there have been consequent improvements in other areas such as health, nutrition, income generation and community decision making. The realization of these benefits will depend on the government's continuing effort to develop

12. A religious/cultural festival held periodically on each island.

and disseminate an improved curriculum.

The retention of the newly educated youth as a human resource in Raa Atoll will depend in turn on the local availability of employment and income generating opportunities. The government will therefore have to channel resources and follow policies which support both improved teaching and increased Atoll employment if the benefits of the IHAP/Islanders' investment in education are to be realized.

The islanders all expressed a willingness to undertake any school maintenance which may be required in the future. The island masons and carpenters who built the school should be assigned to oversee school maintenance. However, they may need additional technical advice regarding timely and appropriate regular upkeep of the schools. The Ministry of Education should therefore allocate funds for annual visits to Raa Atoll of a construction engineer who will monitor the wear and tear on the school and instruct the islanders on the maintenance measures which they should undertake.

The Ministry of Atolls Administration should also see to it that if it has not done so by the time this report is received, the Raa Atoll Development Committee immediately documents its plans for the completion and management of the Atoll Training Center. The MAA should liaise with the Ministry of Education to combine efforts regarding engineering supervision of Atoll level maintenance of schools and the RATC.

VI. INCOME GENERATION

Method

In the course of the evaluation of the income generation component of the project reference was made to the project manager's loan files and to completed loan application forms. This was complemented by discussions with the Assistant Manager of the Bank of Maldives (BOM), Raa Atoll Loan Program (RALP) loan officers, and the project managers. Limited time made it impossible to rigorously select and interview representative individuals to determine the socio-economic status of the direct and indirect beneficiaries of the loan program. However, in an effort to gauge access to and impact of the loan program the Island Chief (Katheeb) on each island was asked to identify for interview 3 islanders whom he considered to be representative of the wealthiest, the median and the poorest members of his island. The socio-economic status of those selected was corroborated by discussion with other islanders. This selection procedure undoubtedly introduced a bias and depended on the Katheeb's comprehensive familiarity with the community and his willingness and ability to identify even those individuals who, while being representative, may not be in his favour. Nevertheless the 46¹ individuals interviewed for this purpose did cover a range of incomes and occupations which provided useful, if not statistically valid, insights into the way the loan program might benefit various segments of the community. Ten out of fifty one loan recipients and applicants were included in this sample.

As our objective is to evaluate the IIAP project, not to do a feasibility study, this chapter concentrates on an evaluation of the loan program activities which have been undertaken under the IIAP project and on an assessment of the risks to and requirements for the self-sustainability of the program. A detailed examination of potentially profit-

1. Limited time on some islands prevented the completion of all interviews on each island.

able areas for loan funding was not undertaken.

Income-Oriented Activities

The loan program described in the Original Project Proposal (P.P.) is the principal activity which was given an explicit income generation objective. Before proceeding to discuss the loan program, 3 income-oriented activities not covered elsewhere should be briefly discussed. The project document indicated that "the project manager and the RADC should search for additional income generating activities for the Atoll and take advantage of existing local resources and new situations (P.P.,p.4). The project managers attempted to meet this stipulation by encouraging and sponsoring participants in the vocational training courses organized by the government -- one in fiber craft and one in jewelry.² They did not encounter much enthusiasm for these activities and none of the 5 participants nominated by the Island Development Committees have pursued their vocation.³ Given this marked lack of interest and the range of objectives to be met within the 3 year project, the managers were correct to focus their energies elsewhere. However, in future, greater care should be taken in the selection of recruits for vocational training courses.

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2. Although the managers recognized a preference among some Islanders (particularly on Kandholhudhoo) for training in sewing and tailoring (QPR 2, Annex 4, p.2) the Vocational Training Centre (VTC) was not and is still not, in a position to offer such courses. Given their other commitments, the managers could not be expected to set up such classes.
 3. Out of 7 accepted for vocational training, only 5 travelled to VTC jewelry and fiber courses (4 women, 1 man). After 1 month, two returned to the atoll leaving 3 in the fiber course (QPR 8, p.8).

The managers distributed a questionnaire to 40 tourist resorts in an attempt to sound out the market for Raa Atoll products. They received only 7 replies and these indicated a need for regularity of supply of crafts and produce which the atoll was not immediately capable of providing. While it may be appropriate in the future to do a detailed analysis of the feasibility of encouraging such production in Raa Atoll, given the managers' own skills and islanders' interest in other project activities, the managers were correct not to give priority to this area. However, the government should provide some follow-up in the form of a more careful analysis both of the tourist market and of other markets and the ways in which Raa Atoll could feed into them.

Other project activities, such as rat and bat control programs, tank and school construction, garden program, reforestation, vocational training and hospital construction could be expected to make an indirect contribution to income generation, through employment creation and indirect production, although the means of achieving the linkage were not spelled out in the project proposal. The possible income effects of these project components has been discussed in the respective chapters of this report and this chapter will therefore concentrate on the loan program.

Overview Of The Loan Program

The original project proposal includes a budget of \$ 60,000 for a general revolving loan fund and refers to, but does not include as a separate entry in the budget, \$ 2,000 for a Rural Women's Loan Program. The document indicates the intended beneficiaries of the loan program in only broad terms -- referring simply to "a community or individuals" (P.P.,p.3). There is no explicit target group or statement of the hypothesized link between the loan program, the distribution of income, and the process of economic development anticipated. It provides only a

general indication that the loan component "is planned to emphasize local economic advantages and to use their (sic) resources available to people on a specific island" (ibid.).

It is proposed that the loans will be administered through a specially created Raa Atoll Development Committee (RADC) charged with the responsibility of selecting loan recipients and administering loans for income generating activities "in close coordination with the project manager" (P.P., p.19). The only indication of the timing for the initiation of loan administration is a budget allocation of \$ 20,000 for loans in the first year of project operation. No detailed statement is made of the training requirements associated with the program. Neither is there a statement of the precise nature of the project managers' duties with respect to this activity. Staffing requirements for direct loan administration are not indicated.

The project extension proposal includes a revised budget for the loan program of \$ 51,000 and there is no reference to funds specifically earmarked for women's projects. Instead the \$ 10,000 in the Women in Development budget line, from which the \$ 2,000 women's loan program might have been funded, is re-allocated for a 2 year foolhuma (traditional birth attendant) training program in Raa Atoll (starting in October 1984).⁴ This re-allocation may be justified as a response to the needs of island women and should contribute to their well-being. It can also be argued that agriculture, credit and other income-generating activities for women could be covered out of regular OPG funding, whereas foolhuma training could not. But it also reflects a tendency of the project managers to favour health activities while yielding to initial resistance to agriculture and income generating activities for women.

8. Including the hiring for 2 years of a VSO midwife trainer.

The Extension Proposal remains general with regard to beneficiaries, only stating its objectives as "to increase the disposable income of atoll inhabitants by financing income generating activities" (E.P., p.6).

Establishment of the Loan Program

In the first Quarterly Report the project managers expressed their judgement that loan application review should be deferred until the 4th quarter of project implementation. They correctly⁵ justified this decision by selecting a strategy which enabled them to initially concentrate their efforts on activities which would both address the social infrastructure priorities identified by the islanders while providing the managers with a more intimate understanding of the administrative and social environment within which the loan program would be established (QPR 1, p.10).

The project managers were also correct not to pursue the formation of an RADC as the primary institution for loan administration. Observation of the operation of the administrative structure at both island and atoll level has confirmed that the membership of the proposed RADC would have neither the skills nor the objectivity to effectively administer the loan program. The establishment of

5. Studies elsewhere have confirmed the dangers entailed in attempting to introduce a program of institutional credit prematurely. Hunter, G. 1978 Agricultural Development and the Rural Poor (London : Overseas Development Institute); p.84. and Swoot, Charles P. 1983. Designing Development Projects that Benefit the Rural Poor, Final Draft (Unpublished; prepared by Development Alternatives, Washington D. C. for FAO, Rome); p.81.

an institution with a lending function at atoll level would have required a prolonged concentration of effort on the part of the project managers, reducing the time available for other activities while offering little likelihood either that the funds would be widely distributed or that the lending program would function effectively beyond the life of the IHAP project.⁶ It was therefore appropriate to await the opportunity to channel IHAP loan funds through a formal banking institution.

The identification of schools construction as a priority activity in the first year of project implementation led the managers to request approval for a re-allocation of \$ 9,000 from the loan budget line to "other" to cover the cost of school construction. This was approved by the Raa Atoll Project Coordinating Committee and indicates that the managers' view was accepted by GRM (QPR 5,p.4).

At the time of the mid-term evaluation in September 1983 the loan program had not begun operation. The mid-term Evaluation Report pressed for an early implementation of the loan program and recommended that an educational program should be instituted to explain the procedures involved and to help people to apply for a loan.

In fact, prior to the evaluation and after the establishment of the Bank of Maldives at the end of 1982 the project managers initiated discussion with the bank and MAA for the preparation of procedures and guidelines for the channeling of IHAP funds through the Bank. In June 1983 regulations,

6. The failure of the RADC after nearly 2 years of involvement to fulfill its responsibilities regarding the Raa Atoll Training Center, lends further support for the managers' judgement (c.f. Chapter V).

application forms and staffing for the operation of the loan program were drawn up with the participation of the BOM Manager and Board Chairman, the MAA and the Project Coordinating Committee. Presidential approval was received in November 1983.

However, by this time less than one year remained under the original grant agreement. USAID/W initially considered this to be too short a period under the IHAP project to ensure that the program would continue beyond the project managers' departure. Subsequently a six month extension to the project was agreed to and the project managers were given approval to proceed with loan program implementation. To obtain this approval the managers argued that the groundwork they had prepared for a loan program should not be wasted, and they emphasized that the program should be seen as a valuable pilot for future nationwide credit schemes for the atolls outside Male. (QPR 8, p.13 See Appendix 5.A for Letter of Agreement for the loan program).

Loan Supervision and Administration

Arrangements were made for IHAP to recruit and, in collaboration with the BOM, train a full time loan officer and two part-time loan officers from Raa Atoll to promote the program, encourage applicants and assist in the completion of application forms.

As part of the institution of the RALP a Raa Atoll Loan Committee (RALC) was established by GRM. This committee has the responsibility of reviewing loan applications and appraisal reports and deciding whether or not to approve loan requests. The committee is composed of one representative each from the Management of BOM, the Board of Directors of BOM, MAA and IHAP plus the full time loan officer. After the end of the project IHAP's seat will be taken by a representative from the RADC. It can only be hoped that the

individual from RADC who takes the IHAP seat will be as conscientious and impartial as her/his⁷ predecessor. If s(he) is not, there will be an added burden to the other, already busy, committee members. This could well diminish the quality of the loan reviews.

Chart VI.1 summarizes the procedures which are followed in the processing of loan applications under the RALP. Loan review cycles are completed every two months and it is expected that it should take no more than 3 months from receipt of an application to disbursement of funds to a successful applicant. The principle causes of possible delay after an applicant is informed that his/her loan has been approved are the time and effort required for the applicant to obtain supporting documentation and make his/her way to Male to conclude the necessary formalities.

Among non-loan applicants interviewed it was the requirement of collateral and the strictness regarding the use to which funds may be put, rather than the difficulty of the application procedures, which were cited most frequently as the reasons for not wishing to apply for a loan. It should be noted that the time and resources required to complete loan formalities represent a hidden cost in borrowing.^a

The principle problem that has been encountered to date in the implementation of the loan program has been the difficulty in recruiting a capable full-time loan officer.

7. It is unlikely that it will be a woman -- but it would be very interesting if it were. The recipient of one of the larger loans approved by the project is a woman.

a. But see discussion of service charges, below.

Chart VI.1: RALP Procedures for Processing Loan Applications

BEGINNING OF BI-MONTHLY REVIEW CYCLE

LAF submit-
ed to 1 of 3
Loan Officers

(1) Borrower fills in Loan Application Form (LAF)
(possibly with assistance of loan officer).

(2) Three Loan Officers review all applications.

- investigate technical and economic feasibility
- consider and appraise : - collateral offered
- equity
- "position of borrower"
- repayment schedule
- prepare appraisal report

LAF and App -
raisal Rep.
submitted to
Rae Atoll Loan
Committee
(RALC)

(3) RALC reviews all applications (within 30 days of receipt)

Application
Approved
BOM prepar-
ed as nec.
documentation
(as per (6)
below)

Application
Rejected

Rejected applicant given written
explanation

(4a) RALC decides on repayment schedule

END OF BI-MONTHLY REVIEW CYCLE

Borrower signs
letter of
sanction

(5) Borrower obtains supporting documentation

- proforma receipts
- proof of ownership for collateral (eg. of dhoni)
- Letter of Guarantee signed by guarantor

(6) Documents signed/registered/handed over in Male

- Letter of Sanction - signed by Guarantor
- Letter of Guarantee - signed by Guarantor
- Loan Agreement - registered in Male Courts
- Demand Promissory Note - signed by Guarantor
- Debit Slip Book - given to Guarantor
- Passbook - given to borrower

Loan repaid
on schedule

(7) Credit disbursed (crossed checks or cash)

Repayment default

(8a) Funds deposited in Rae Atoll

(8b) Investigate defaulter

- (i) 1st repayment missed - FT Loan Officer gives warning
- (ii) 2nd repayment missed - 3 Loan Officers visit + investigate

(9) RALC decides on action to take

(10a) Renegotiate Loan Term

(10b) Press Charges in Male Courts
- Repossess/ liquidate loan
Funds/collateral on
outstanding balance

Given the level of remuneration that GRM had allowed to be offered, there was little interest in the job and only one application was received for the post. After 9 months of training and on-the-job supervision the individual appointed is still unable to perform proper business and credit analyses. This raises serious doubts about his ability to critically assess the viability of the proposed ventures. This is a serious drawback in an area where only a few wealthy entrepreneurs have the business experience to make and prepare a business strategy. In addition, the loan officer's willingness to recommend an applicant who did not conform to the loan regulations puts into question his ability to dispassionately enforce loan repayments and other regulations. The part-time loan officers appear to be slightly more capable. Provided the number of loans to be supervised does not increase too rapidly, they might be able to compensate for the full-time loan officer's weakness to some extent. But if the loan officer's performance does not improve within 6 months he should be replaced with a more competent, probably better paid, individual.⁹

It should be noted that there may be problems with conflict of interest as one of the part-time loan officers became a magistrate and Atoll investigator a few months after his recruitment. He may prove reluctant to undertake a thorough investigation of loan repayment on loans which he has been involved in approving. If this proves to be a problem, he too may need to be replaced.

The project managers have recognized the weakness of the loan officer and they have discussed this with the RALC as well as having written to the BOM recommending close supervision and technical back-up for the loan officers on Raa Atoll. Discussion with the project managers and

9. A loan officer can be dismissed if 3 out of 4 of the other RALC members agree on the grounds of proven incompetence or fraud.

with the Assistant Manager of BOM has confirmed that the application vetting by the RALC alone, with its Male' base and busy members, cannot be detailed and informed enough to compensate for minor errors which may subsequently prove to be serious, committed by inadequately supervised loan officers. Yet the financial arrangements for RALP do not ensure that BOM will provide the officers with the field supervision they will require.

Loan Program Operating Costs

The costs of operation of the RALP are to be financed out of the 12 percent per annum "service charge" applied to all loans. This charge compares with normal commercial rates of from 15 percent (for agricultural loans) to 20-22% (for other types of loans)¹⁰ Thus, on the stipulation of the Presidents' office (but against the recommendation of the project managers), RALP loan recipients are benefiting from a substantial subsidy on borrowing.

Such a subsidy can only be justified on the grounds of equity or incentive. With respect to equity, as will be discussed below, the beneficiaries of the loans are not the poorest members of the community, and a subsidy simply represents an added transfer to those who can afford to invest -- with the larger borrowers getting the greater absolute benefits.

Unfortunately it is not easy to quantify the market demand for credit and to thereby test the need for a price incentive to borrowers. The Islamic stricture on interest charges makes it very difficult to obtain information on the real cost, whether in cash or non-cash terms, of an informal loan, although the rate of 4% per month was cited

10. Reported by Delwar Hussein, Assistant Manager, BOM

in one case (project manager, personal communication). Furthermore, the virtual absence of easily accessible institutional credit for investment in the Atoll makes it impossible to determine the price elasticity of demand for credit. Nevertheless, responses given by interviewees suggest that borrowers would be willing and able to pay the full market cost for a loan.

The positive and growing response to the RALP suggests that the demand for loan funds will soon exceed the supply.¹¹ This is particularly true for loans for dhoni mechanization where the BOM Assistant Manager estimated that with a 12% rate of interest there is a 50% internal rate of return on investment.

In fact, interviews with islanders have indicated that they can potentially marshal significant savings, and they are currently making investments in housing and consumer durables. Rather than lack of capital resources, the principal constraint to increased investment has been the lack of experience and initiative to channel unused local potential into new and innovative income-generating activities within the atoll.

11. Table VI.2 indicates that applications for the February loan review are requesting four times the amount of loan funds remaining for IHAP disbursement (Rf. 84,900). This last rush of applications is partly a response to the stipulation that by the end of the project the funds allocated will be \$ 51,000 or the value of loans approved to date -- whichever is less. Borrowers are therefore being encouraged to request loans as quickly as possible in order to maximize the value of the capital IHAP will allocate to the fund before project conclusion. But regardless of the short-term motivation, the willingness to request loans suggests a view that the funds can be profitably used.

A financial analysis of the costs and returns of the loan program (see details in Appendix 5.B) indicates that while the program is financially viable in the short run, the estimated annual increase in the value of the loan fund is less than 4%. This is less than the current annual inflation rate of 15%.¹²

There is thus no allowance for a growth in capital to meet growing demand for loans or increased cost of resources for any given type of loan. Furthermore, achievement of even this increase will depend on the ability to keep the increase in loan program operating costs (primarily salaries and travel expenses) at less than the rate of inflation, which would seem to be unlikely (particularly since without a salary increase it will not be possible to attract more competent loan officers).

During the life of the project the costs of training and supervision have been covered from the project budget. After IHAP's departure the responsibility for these important elements will be transferred to the BOM. Discussion with the Assistant Bank Manager (ABM) indicated that the deployment of a competent supervisor for the RALP would require the offer of a salary in the range of Rf. 1,400 per month, in addition to the costs of travel, daily allowance in the atoll and Senior Supervision from Male'. The ABM was also of the opinion that it would be very difficult to find an adequately trained person to recruit, even at the suggested salary. Expenditures would therefore need to be incurred for a training programme of at least 6 months.

12. FAO/World Bank Cooperative Program. July 1984. Maldives Production Promotion and Credit Project Preparation Mission (FAO, Rome : Unpublished Report); Annex 1.

Excluding the costs of training and assuming that a supervisor will dedicate 25% of his time to loan supervision (2 months per annum in Raa Atoll and 1 month in Male) and receive 3 days a month of supervision from a senior bank officer, supervision costs should be approximately Rf. 8,700 a year.¹³ These costs will have to be covered out of the net income share (estimated at Rf. 8,886 -- See Appendix 5.B for details) allocated to BOM. The BOM and MAA, as the principle parties responsible for the continued viability of the loan program, must take the necessary measures for recruitment and training to insure adequate supervision of the loan officers in Raa Atoll.

Although GRM may chose to subsidize the RALP supervision costs, the prospect for the longer term viability of the loan program will be greatly increased if the normal market charge (possibly with a flat allowance/discount for the cost of coming to Male to complete loan formalities) is made to borrowers. It is essential that loan repayment should generate sufficient funds to pay and provide transport for capable loan officers, and to ensure the effective selection and supervision of borrowers.

Furthermore, only with a greater return on loans will there be a chance for an expansion of funds for further lending. In addition, unless the returns from lending to the Atoll compare favourably with those yielded by normal commercial lending to Male borrowers, the BOM will have little incentive to channel increased capital into atoll

13. Annual Costs Estimated as follows:		<u>Rf</u>
A.	Salary for 24% of officer's time for Field Supervision at Rf. 1,400 per month	4,200
B.	Return trip to Raa Atoll - 6 trips	240
C.	Per diem Raa Atoll - 60 days @ Rf. 10	600
D.	Senior Supervision - 3 days/mth x 12 @ Rf. 100 per day	<u>3,600</u>
		<u>8,640</u>

loan programs and aggressively promote loans in areas further afield from its current Male' base of operation.

Loan Distribution

The first round of application reviews took place in June 1984, and there has been a total of 3 rounds with 25 applications approved through January 1985. A fourth round is due to take place the second (atoll) and final (Male') weeks of February. All but one of the loans have been to individuals rather than groups, perhaps because it takes longer for groups to get organized to apply for a loan.

Repayment of loans from the first round of approvals was due to commence in December 1984. This means that there has been only a limited period to assess loan recovery. In the first 2 months 9 borrowers were due to start payments and so far there has been a 100% repayment rate. While this is a positive sign, one cannot conclude too much from this as it has been found elsewhere that the percentage of credit overdues tends to increase from year 1 of a credit scheme to year 4 or 5 (Hunter, p.84).¹⁴

Table VI.1 shows the distribution of loans by type of activity financed and value. The largest loans are being provided for fishing (primarily profitable mechanization of boats), fuel supply for fishing boats, and transport (principally mechanized cargo vessels). The loans in these three categories represent 36 percent of the total number of loans and 70% of the total value of loans.

14. An Overseas Institute of Development report has observed that: "Where default is high, there are usually two main categories of defaulters; the poorest, who often lack the technical knowledge to use the credit productively and, at the same time, are understandably tempted to spend it on family consumption and accumulated private debt; and the wealthiest, whose default is deliberate." (Hunter, p.84)

Table VI.1: Number of Loans Being Financed by Type of Activity and Average Value of Loan

Type of Activity	Number of loans	Total value of loans Rf.	Average value of loan Rf.	Range Rf.
<u>I. Primary Production</u>	9	125,600	13,956	
A. Fishing ^a	5	90,500	18,100	9,000-34,200
B. Poultry	3	8,600	2,867	1,600- 3,500
C. Others ^b	1	26,500	26,500	26,500
<u>II. Secondary Production</u>	6	24,200	4,033	
A. Fish Salting	2	10,000	5,000	5,000
B. Cottage Industries ^c	3	11,700	3,900	2,000- 5,000
C. Sewing	1	2,500	2,500	2,500
<u>III. Service and Trade</u>	10	113,300	11,330	
A. Transport	3	63,000	22,662	2,400-35,000
B. Retail	6	40,300	6,717	4,900-15,400
C. Tea Shop	1	5,000	5,000	5,000
TOTAL	25	Rf. 263,100 Rf	10,525 (\$ 1502)	

- a. Exclusively purchase of engines and dhonis
- b. Fuel supply
- c. Carpentry, Brass

source: Project Managers' Loan Records

This concentration is even more marked among loan applications awaiting the February reviews. Loan applications for fishing (17 for dhoni mechanization, 2 for dhoni construction) and fuel supply account for 42% of loan applications and 74% of the value of loans requested.¹⁵ The average size for both these types of loans has increased. This demand reflects the high expected profitability of investment in dhoni mechanization.

To avoid the outflow of capital from the atoll and to prevent loans from being used for consumption expenditure, the loan regulations have incorporated a number of measures designed to channel investment into activities which will provide a service or stimulus to the Raa Atoll economy. Loans are required to be used for enterprises which will operate from the Atoll and applicants must specify how their proposed activity will serve the community.¹⁶ In addition, an effort is made to promote a wider dispersal of loans by earmarking 30% of loan funds for loans under Rf. 5,000 (appx. \$ 700) in value.

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15. The actual distribution of funds between activities will depend on the RALC decisions regarding which loans to approve.
 16. An effort has been made through the project Newsletter and loan officers to make people aware that loans should contribute to atoll development (rather than simply private consumption). Most applicants interviewed recognized this intention although they might not have understood its implication regarding the types of loans which would be approved. Loan officers are required to specify the expected developmental effect of each loan in their appraisal reports.

Table VI.2: Number of Applications Outstanding for February Review by Type of Loan and Average Value of Loan^a

Type of Activity	Number of Loans	Total Value of loans Rf.	Average Value of loans Rf.	Range Rf.
<u>I. Primary Production</u>	13	271,960	20,922	
A. Fishing ^b	9	210,880	23,431	15,000-35,000
B. Poultry	2	4,975	2,488	2,500
C. Others ^c	2	56,105	28,053	21,105-35,000
<u>II. Secondary Production</u>	7	30,300	4,329	
A. Fish Salting	5	23,300	4,660	3,300- 5,000
B. Cottage Industries ^d	2	7,000	3,500	2,500- 4,500
C. Sewing	-	-	-	
<u>III. Service and Trade</u>	6	59,461	9,910	
A. Transport	-	-	-	
B. Retail ^e	6	59,461	9,910	4,500-35,000
C. Tea Shop	-	-	-	
TOTAL	26	Rf. 361,721	Rf. 13,912 (\$ 1987)	

- a. Based on Loan Officer's returns. Value of loans for 5 of the 25 applications are estimates.
- b. 7 for mechanization of dhoni, 3 for construction of dhoni.
- c. Fuel supply, included here as a direct input to fishing.
- d. Carpentry and furniture making.
- e. Includes a combined food retailing and fish salting business -- loan value Rf. 35,000. Other 5 loans are for approximate Rf. 5,000 each.

Loan Beneficiaries

Unfortunately no data are available on the distribution of wealth and income in Raa Atoll so it is not possible to make a statistical comparison of the characteristics of the loan beneficiaries with those of the population as a whole. However, the following discussion can provide a qualitative basis for evaluation.

The assessment of the relative socio-economic status of the beneficiaries must take into account the fluidity, flexibility and diversity of occupations open to islanders. The "rich" persons recognized as forming the island elite obtain a money income and derive control of capital from several sources, the most common being the ownership of fishing boats (particularly mechanized dhonis), the control of coconut palms, and the lease of uninhabited islands. While wealthy individuals may dominate in the control of productive physical capital assets, skilled masons, carpenters and fishermen, can be in a position to demand a money income and achieve a level of consumption which compares favourably with that of the "rich".

Aside from these relatively advantaged members of the community, a striking characteristic on the islands is the relative uniformity in the level of living¹⁷ of the majority of the population. Relatively equal access to the sea, to land and to migration appears to provide the members of the community with similar opportunities to combine a range of income generating activities. The poorest inhabitants of the islands have tended to be those who have fallen on hard times due to ill health, disability,

17. Level (as distinct from standard) of living refers to material (food, housing, clothing, shelter) conditions and immediate access to services. There may well be greater disparities in wealth and consequent potential access to services (e.g. in Malé) than are evident on the surface.

mental feebleness or family difficulties. With the exception of Kanholhudhoo, which has special, quasi-urban characteristics, poverty does not seem to have been inherited and even the economically weakest families have the ability to satisfy their basic needs for food, shelter and clothing.

Application forms for the twenty-five loans approved through January 1985, were reviewed to assess the attributes of the loan recipients. Although 64 percent of the loans constituting 24% of the value of funds allocated were for sums less than Rf. 5,000 it would appear that the relatively better off and influential members of the community are disproportionately represented among loan recipients. While it is unlikely that more than 20% of island households own dhonis,¹⁸ 39% of loan recipients own one or more dhonis. More than half of the loan recipients (52 percent) are either kathoobs, relatives of the kathoob, other government employees or members of the IDC on their island (this group is likely to make up no more than 30% of household heads on each island). The average number of people in the households accruing an increased income from a loan is 7, which is more than the average for Raa Atoll (which is 6) so this may increase the number of beneficiaries per loan.

18. The Baseline Survey prepared by the project managers reported a total Raa Atoll population of 10,154, or 106 families per island (average of 634 people per island, 6 persons per family (Buijs and Kittle, May 1982, p.8). The World Bank Country Study on Maldives estimated 3 owners (as distinct from vessels) of pole and line vessels per inhabited island (pole and line vessels account for 90% of fish landings) and 17 smaller trolling vessels per inhabited island (ownership of these is more diffused but they reportedly account for an insignificant amount of the fish catch) (World Bank, p.14). This would give an average of just under 19% of families per island owning dhonis of all sizes. Although there may now be more mechanized dhonis per island than before, these are replacing the sailing pole and line vessels. Ownership of these vessels has not become more diffuse. At the same time it would appear that the number of smaller trolling vessels in use has declined, (Footnote continued with tabulation on page following).

Number of Dhonis on Raa Atoll
1982 and 1985

	Pole + Line Vessels			Trolling Vadhu Dhonis (Small Sailing)
	Mechanised	Sail	Total	
1982	97	41	138	319
1985	106	26	132	278

(source : Raa Atoll Office).

While it is too early to confirm that loan recipients have experienced a direct increase in income, Table VI.3 shows the loan recipients' estimated expected monthly income from loan funded activities. This ranges from Rf. 335 to Rf. 6,270 per month.¹⁹ It may not be appropriate to compare these figures with reported current monthly incomes as these figures are undoubtedly distorted by the conflicting inclinations to under-report current income while wanting to demonstrate ability to sustain a loan. However, the expected incomes compare favourably with the monthly incomes reported for a range of representative island occupations (Table VI.4).

Table VI.5 indicates a high demand for higher value loans. 26% of applicants are requesting loans of over Rf. 20,000 and their requests represent 61% of the total value of applications. As the total value of applications for review is 4 times the value of funds remaining for disbursement (Rf. 84,900) it should be possible for the RALC to be rigorous in selecting applicants who would otherwise not be able to mobilize enough funds (i.e. the less wealthy) and whose enterprise will make a positive contribution to Atoll development.²⁰

All applicants reported that they would be employing labor on their enterprise and 49% indicated that they would employ more than one person. The estimated wage payment ranged from Rf. 50 to Rf. 450 per month with an average wage of Rf. 209 per month. However, these wage costs are largely notional as in most cases it is likely that family members will be employed. The direct, employment generating benefits will thus not extend far beyond the recipients'

19. These estimates may need to be revised downwards since the shortening of the repayment period in some cases has increased the monthly loan repayment costs.

20. 30% or approximately Rf. 25,470 is earmarked for small loans of less than Rf. 5,000 in value (cf.p. 128).

Table VI.3: Distribution of Loans by Size of Loan

Rf.	Number of Loans in class		Total Value of Loans in class		Average Present Income Rf.	Average Anticipated Income from Loan Activity Rf.
	No.	% Total	Value Rf.	% Total		
0 -2,500	3	12	6,000	2	525	335
2501 -5,000	13	52	59,100	22	677	1,091
5,001-10,000	1	4	9,000	3	1,052	2,371
10,001-15,000	0	-	-	-	-	-
15,001-20,000	4	16	62,700	24	1,033	1,078
20,001-25,000	0	-	-	-	-	-
25,001-30,000	1	4	26,500	10	2,660	6,270
30,001-35,000	2	8	64,800	25	550	2,359
35,001-40,000	1	4	35,000	13	NA	NA
TOTAL	25	100%	263,100	100%	-	-

source: Project Managers' Loan Records.

Table VI.4: Monthly Incomes Reported for Representative Island Occupations

Office Peon ^a	Rf. 130
Family Health Worker	190
Shark Fisherman	200
Trained Teacher	295
Mason	300-600(+ food (150))
Katheeb	325
Toddy Tapper	350-600
Vadhu Dhoni Owner / Fisherman	300-500
Loan Officer	350
Leading Carpenter	600(+ food (150))
Boat Yard	
Boatyard Supervisor	700(+ food (150))
Traditional medicine shop	1500
Engine Dhoni Owner	2000
(per boat)	

^a. The South Asian term for laborer

source: Island Interviews.

Table VI.5: Distribution of Loan Applications Awaiting February Review by Size of Loan

Value of Loans Rf.	Loans in Class		Total Value of Loans in Class	
	No.	% Total	Rf.	% Total
0 - 2,500	3	12	7,475	2
2,501 - 5,000	11	42	52,261	14
5,001 - 10,000	0	-	-	-
10,001- 15,000	3	12	45,000	13
15,001- 20,000	2	8	35,414	10
20,001- 25,000	1	4	21,105	6
25,001- 30,000	1	4	29,648	8
30,001- 35,000	5	18	170,818	47
35,001- 40,000	-	-		
TOTAL	26	100%	361,721	100%

source: Project Manager's Loan Records.

family. However, the extensive interlinkages of family ties and the current relative fluidity of island society may slightly mitigate a trend toward polarization of income.

The loans being financed by the program can be expected to have desirable forward and backward linkages within the Raa Atoll economy, although it is too early to confirm that these have been established. Improved transport in the form of cargo vessels and on-island carriers (push carts) ought to improve the flow of goods to and from, and within, the islands thus improving the market for, for example, loan-assisted salted fish and poultry enterprises. Cottage industries and trading establishments should also benefit from more regular and easier access to stocks, raw materials and outside markets while catering to the needs of those deriving an increased income from fishing on loan-assisted mechanized dhonis.

However, the actual expression of these spread effects will depend on how much of the surplus from fishing (the leading sector in the island economy) is encouraged to remain in the islands, given the government's pricing policy. It will also depend on the consumption habits of those with the highest effective demand, notably those making the largest investment in mechanized dhonies. Until now there has been a tendency to use increased purchasing power to buy imported goods and to use services in Male'. A continuation of this trend could effectively stifle growth in the local economy by not stimulating new employment at a time when displacement of sailing dhonis by mechanized dhonis may reduce the total demand for fishing crew members.²¹

21. However, at the moment, migration and more attractive wages outside the atoll, have resulted in shortages in supply of labour for fishing boats. In fact, current relative prices have made mechanized dhoni owners prefer to use their vessels for purposes other than fishing. This preference has been evident. In recent experience with the World Bank-assisted fishing dhoni mechanization scheme -- some borrowers have preferred to pay fines rather than do the required amount of fishing.

This could lead to greatly increased income disparities within the islands and to the continuation of the outmigration which the government has expressed a wish to avert. It is therefore essential that the government follow a pricing policy which will allow more of the surplus from fishing to remain in the Atoll,²² instead of going to Male, and will encourage a greater use of domestic resources by stimulating cottage industries and crafts.

Impact and Self-Sustainability

Considering, now, the impact of the loan program on other project purposes, it is still not possible, nor would it be expected, to observe any consequent improvement in health or education. The channeling of increased incomes into improved nutrition, hygiene (e.g. the construction of additional MATs) and schooling will depend on government support for activities which will encourage islanders to change current consumption habits.

The agricultural activities receiving credit, currently exclusively in poultry production, will absorb readily available local foodstuffs, such as millet (small quantities grown), fish-meal and coconut. However the small scale of operation and the additional reliance on GRM-subsidized rice means that they will provide a minimal stimulus to increase agricultural production. It is conceivable that increased availability of food items, kerosene and consumer goods in the retail outlets being financed by the loan program will encourage greater efforts to earn cash from agricultural sales. But so far agricultural producers, primarily women, have shown very little inclination to increase their efforts in this area. An enthusiastic and extended effort by individuals trained in both agriculture and communication will be necessary to stimulate women to make more efforts in agriculture. Technical advice should concentrate

22. Including higher income to fishing crews.

on horticultural and tree crops, perhaps with efficient small-scale irrigation, and on means of improving labor productivity through methods of increasing soil fertility and reducing pest damage. These, combined with the lack of the incentive of a steady and reliable access to markets, are the most frequently cited constraints to farmer interest in increased agricultural production.

The loan program has not made a discernable contribution to fostering greater awareness of the advantages of self-help initiatives for community development. However, it has probably been effective in mobilizing funds and resources for private productive investment which may otherwise have been channeled into consumption.

The long term viability of the loan program in the islands and the access of a wider socio-economic cross-section of the community to credit will depend on careful selection and supervision of credit recipients and discipline in loan recovery. For these conditions to be satisfied, the loan officers recruited for this program will require close supervision and continued training and support from the BOM. Unless such support is provided, the program, with its relatively inexperienced officers, will be extremely vulnerable to the chronic problems of loan default and appropriation of funds and benefits by the wealthiest members of the community.²³

So far neither BOM nor the RALC have made decisions or taken concrete actions that will ensure that this supervision is provided. It is essential that funds be earmarked and immediate measures be taken to assign a quarter time supervisor to assist the Loan Officers (full and part-

23. Such supervision would have been facilitated had the project been extended for more than 6 months. However, the managers would not have been justified in basing their loan program activities on the clearly invalid assumption that the project would be extended. Nevertheless given that GRM chose not to request an extension of the project, the responsibility for the viability lies squarely with GRM and BOM.

time) working in Raa Atoll. Immediate consideration should also be given by BOM and MAA to how Raa Atoll can fit into future national loan programs anticipated for the Atolls outside Male'. For example, the BOM and GRM are contemplating opening 2 low-cost 2 person branches, one in the Northern Region and one in the South. One of the branches might be established in Raa Atoll. Also, negotiations are underway with the World Bank for a national production promotion and credit project with an estimated budget of US \$ 3.6 million. Future technical assistance for loan officers in Raa Atoll could be obtained through this project if it is approved.

BOM and MAA must also give immediate consideration to ways of increasing the availability of funds both for program operation and for increasing loan capital. There may be a good case on development or equity grounds for a subsidy on loans for less conventional or less secure investments in agriculture or cottage industries, provided these loans reach the less wealthy segments of the community. But there is no justification for offering cheap credit for wealthier borrowers to invest in highly profitable dhoni mechanization and retail trade.

Normal market loans in Male' currently carry differing service charges depending on the type of enterprise. The application of this same range of market rates should be extended to Raa Atoll.

The Assistant Manager of BOM suggested that capital of Rf. 1,000,000 (approx. \$ 143,000) would be necessary to generate enough income from service charges to operate efficiently. The IHAP project has contributed more than 1/3rd of this amount. It is recommended that BOM and GRM each contribute an additional third to this sum. The combination of the evident demand for loans and a market rate of interest should make this an attractive investment for both parties.

This program has been justified by the important initial experience which it has provided in the extension of easier access to credit to the islands. Although there are risks that the program will flounder, if the measures recommended above are implemented, there is a good chance that the RALP will continue to make an important contribution to the development of Rau Atoll.

VII. THE COMMUNITY BASED INTEGRATED RURAL DEVELOPMENT

Method

In addition to the review of project documents, the data collection for the evaluation of this project component included interviews with officials in the Ministries of Atolls Administration & Planning and Development,¹ the project managers, the Atoll Chief, members of the Raa Atoll Development Committee, the Katheeb and/or Assistant Katheeb on each of the 16 islands, and meetings with 13 Island Development Committees² and 9 Women's Development Committees.³ Individuals interviewed as part of the loan program assessment were also questioned regarding their involvement in and attitude toward the community activities being promoted through the IHAP project.

Overview: "Self-Help" and the CBIRD Approach

In order to evaluate the project activities in the area of Community Based Integrated Rural Development (CBIRD), it is first necessary to examine the development of the use of the concept in the course of project implementation. In fact, the original project document does not make use of the expression. Instead it simply refers to the use of "Self-Help" as a means of "covering a wide range of needed services" with limited resources (P.P., p.2). The project document anticipates "that community participation, in the form of funds, time, labor, materials will become expected in all community development projects", and that in this respect "this project will become a model for other development efforts in other atolls in the Maldive Islands (sic)" (ibid., p.4). The project document does not specify

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1. See Appendix 2 for details.
 2. All except Alifushi, Maduwarl and Fainu where there was not enough time to hold such a meeting.
 3. It was not possible to meet with Women's Committees on Ugulu, Gaandudu, Angolitheem, Kasgatheem, Alifushi, Maduwarl and Fainu.

the means by which such "self-help" activities will be stimulated and sustained nor the expected role of the project managers in generating or supporting those activities.

Given the ambiguity of the project document the project managers were correct to present in their first Quarterly Progress Report their own interpretation both of their duties and of the methods they would follow to bring about "self-help" activities. Here they state that:

"The original workplan did not accurately reflect the process of development that needs to take place before, or at least while projects are being planned, implemented, etc. Consequently more emphasis will be placed on human resource development throughout the project."

(QPR 1.p.8)

They argue that there will be a greater chance of sustained community participation in the maintenance of project-assisted structures and in the initiation of new activities when there is:

"...sharing (of) skills in project planning, implementation and evaluation among whole groups of people (where) more than one or two have these skills; and a variety of activities might result if more people were trained in problem analysis, creative problem solving, etc."

(Ibid., p.9)

They therefore state their intention to combine their provision of technical assistance and materials with two types of training: informal training on-the-job and formal training at a proposed training center to be built in Ugoofaaru.

At no point was the managers' definition of "Community Based Integrated Rural Development" documented although the managers did attempt to put across the meaning of "integrated rural development" at an early Raa Atoll Development

Project Coordinating Committee meeting (QPR 3,p.4). Nevertheless, the logic of their approach is clarified in the Operational Program Grant Extension Proposal which presents the acquisition by islanders of "skills necessary to become effective development promoters and implementers" as a distinct project purpose (E.P.,p.8). Thus the lessons derived from the decision making and implementing process are considered as important as the physical outputs achieved through community contributions of funds, labor, time and materials. The wish to promote learning by doing may mean that the achievement of tangible outputs is, at least initially, slower than with a top-down, more authoritarian approach. But the long-term development benefits are expected to be greater (cf. Sweet,p.16).

The project managers' emphasis on the need to transfer decision making as well as technical skills is supported by experiences elsewhere. These experiences have led some development administrators to insist that projects which involve community participation are most likely to be self-sustaining and reduce the long-term costs of maintenance of project structures (cf. Sweet, p.17; Hunter, p.26, also p.108). This is because when project beneficiaries have understood the reasons for the selection of an activity and have personally invested time and/or resources in a structure or activity they often feel they have a greater stake in its upkeep. Furthermore if they have actively participated in the evaluation of the problem, they should be more capable of initiating new projects and making repairs to existing structures. Consequently fewer outside resources would be required to provide the population with a particular range of services. Naturally, the amount of time needed to effectively transfer these skills will depend on the initial educational base, experience and attitudes of the

community and its leaders.⁴ Given the differences in the rate of acquisition of these skills, the short-term success of a CBIRD project cannot be judged solely in terms of tangible outputs. Initially, progress may only be evident in the form of improved articulation of needs and how to meet them.

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4. It should be noted that the implications of this approach for staffing and project design are not that there should be distinct "community development" officers nor that there could be a viable project which concentrated solely on training communities in "decision making" in the abstract. It is observed in the ODI report cited earlier that:

"attempts to provide the social approach by putting in an additional (community development) officer alongside an extension man are expensive and have proved unsatisfactory. Inclusion of a social element in all extension training, better technical support from sub-district, and more selective deployment of staff, according to the degree of advance of farmers are all required."

(Hunter, p.39).

Thus, in other fields as well as agriculture, support geared to community needs should be provided by technically trained individuals with social skills in community consultation and organization.

In order to promote the objectives described above the project managers, assisted by their Maldivian administrative assistant, requested and took part in a series of meetings at central governmental, atoll and island level. Here they expressed their belief in the need for the community to take part in the planning and implementation of activities to be undertaken under the IHAP project. In these meetings they insisted that those attending should complete specified steps in identifying and prioritizing their problems and evaluating solutions before an agreement could be reached regarding IHAP material assistance. At the outset, for example, their initiation of support for school building required three meetings before a construction project could be finalized:

- 1) Needs assessment discussion following a letter requesting that IDCs list in order of priorities the development needs on their island.
- 2) Discussion of the priority problem and how it might be solved.
- 3) Finalization of the means of solving the problem, agreement on the respective contributions of the islanders and IHAP and outline of a work plan.

(Eight Months P.R.p.7)

Although it would appear that the project managers did not receive any formal objection to the approach they chose to use, they faced a significant initial resistance to what was considered to be too much talk and not enough action. The discrepancy between the view of the project managers of their role in stimulating self-help development and the view of representatives of GRM was made explicit, if not well articulated, in the Interim Evaluation Report. The document makes various references to the managers' need for greater flexibility, for greater utilization of the existing administrative structure, and for a greater emphasis in providing technical support while delegating the promotion of community activities to local counterparts.

Taken together the general view expressed in the mid-term evaluation could be interpreted to mean that the project managers should shorten the discussions, be less insistent on written documentation of the agreed contributions of the islanders and IHAP to specific activities, and concentrate on providing whatever materials and technical advice they had to offer.

At the same time the report called for a more active involvement of government and other local personnel in IHAP activities as well as for the appointment by MAA to IHAP of a full time counterpart. This counterpart would be charged with working with IHAP through the Atoll Chief and the RADC at the atoll level (Interim Evaluation,p.10).

In fact, in the second quarter of project implementation the managers did recognize that they needed an additional (preferably female) Maldivian assistant (QPR 2,p.9). However, despite requests to MAA for assistance in recruitment and a press advertising campaign, their attempts to hire someone failed (QPR 3,p.3). In the sixth quarter the managers suggested that it might be easier to get applicants if GRM accepted IHAP employment as counting toward the government pension plan. But the government failed to respond to the suggestion (QPR 6,p.4). However, the MAA did appoint a liaison officer who officially took up his post in July, 1984 (after informally having started to work with the project managers in April 1984).

CBIRD In The Maldivian Context

The source of the discrepancy between the project managers' and the Maldivian understanding of the managers' role as "self-help" promoters can be traced to different traditions of thought regarding the meaning of self-help development. Historically the political structure in the Maldives has been based on centralized decision making

and the imposition of community responsibilities on the populace by the Ketheeb (as the representative of central government). Within this structure neither the criteria for the selection of the Ketheeb, nor the usual level of education of the Ketheeb, nor the authoritarian position of the Ketheeb have encouraged popular innovation or initiative with respect to community services. In fact in most of the islands it was reported that prior to the arrival of IHAP, community efforts had been restricted to street sweeping, mosque and wall building as well as jetty and breakwater construction and harbor deepening. This contrasts with the development ideology, stressing shared knowledge and communal decision making, adhered to by the project managers.

Given the Maldivian administrative structure and the contrasting approaches to "self-help" development the project managers could have chosen one of three avenues for achieving the project's more tangible objectives (i.e. construction of schools, water tanks, latrines, implementation of rat control, etc.). They could have conformed to the traditional island procedures -- informing island administrators that IHAP would provide specified technical advice and material assistance for the construction of water tanks, latrines, rat control, etc., but not involving them at all in the choice of activity or the commitment of resources. As discussed earlier, experience elsewhere suggests that such an approach can create technical and material dependency as well as a lack of follow through on activities whose benefits are not recognized. There is also a risk that materially and politically stronger segments of the population will appropriate a disproportionate share of the benefits (Swout, p.14).

The second avenue would have been to bypass the existing administrative structure and attempt to broaden participation and access to resources by stimulating initiative and decision

making in the community through informal meetings and awareness raising activities. In theory this should represent a more democratic development which would prevent the more powerful sections of the community from obstructing or appropriating development activities.⁵ However, the power

5. As has been stated before, a key objective in the CBIRD approach is that skills, especially basic skills in problem analysis and problem solving are shared. How this sharing is achieved is a tactical problem requiring an understanding of social, political and economic relations in the community.

It may be appropriate to work directly with the most dynamic and receptive individuals in the community. This would be the case if there is evidence that they will share their knowledge and skills, that they are a recognizable model to the rest of the community, and that the outside assistance offered to the "leaders" will be equally accessible (same cost and quality and within their means) to the "followers". But it must be borne in mind that "leaders" are often already relatively privileged (this is one of the reasons that they can afford to take the risks of innovation). When support is channeled to these privileged individuals, there is a risk that they will simply monopolize the benefits of the technical and material assistance which is being provided.

Therefore, if there is truly a political will to spread the benefits of development more widely in the society, it is necessary to explicitly choose to work with the weaker sections of the community. The ODI report cited earlier suggests that this can be done most effectively in small face-to-face groups whose members are provided with "management technique, and, in appropriate cases, ... credit, so that they gain the experience and discipline of management and can later play a full part in 'whole community' organizations..." (Hunter, p.18).

of the government, and the government's reluctance to yield that power, as well as the relative submissiveness of the general population would have made such a strategy untenable in Maldives. The experience with the constitution of IDCs, described below, illustrates the tension between the government's wish to retain control over island development while trying to achieve some devolution of decision making.

The third and most pragmatic avenue was the one chosen by the project managers. They worked with the government sanctioned administrative structure -- the Atoll Chief, Kathoobs and IDCs and, occasionally, clubs -- but they insisted on an active involvement in the process of identifying community problems and evaluating and selecting appropriate solutions.

The managers originally considered that their training activities should cover not only technical subjects, but "leadership training" for atoll and Island Offices and development committees (QPR 1,p.9). However, after repeated efforts to schedule such a course they concluded that most people would not be well disposed to a formal training of this sort by IHAP " (QPR 7,p.12). Although the cultural and social reasons for the response received by the managers are understandable, contact with various island leaders has demonstrated the need for such training -- even if it is not administered by advisors such as the IHAP project managers.

Given the lack of experience with the managers' approach at all levels, as well as its political implications as politically threatening to the Kathoobs', and ultimately, the central government's authority, it is hardly surprising that the usefulness of the procedures should be questioned at the outset. It was therefore a strategically correct choice to work with traditional groups and to combine the "lessons" in problem solving and planning with the

provision of technical and material assistance for activities given priority by the islanders, or rather by the Island Development Committees, themselves.

Impact and Self-Sustainability

An assessment of the actual improvement, as compared with the situation before the project started, in the ability of islanders to evaluate and solve community-related problems is made difficult by the absence of any basis for comparison with the situation before the project started. Neither, is there enough evidence to assess the islanders' future effectiveness in maintaining the structures and services generated under the IHAP project. The structures have not been operating long enough to test the islanders' response to problems in the absence of an IHAP presence in the Atoll.

However, in interviews with Katoobs, Island Development Committees and Women's Development Committees on 13 islands the members unanimously expressed the view that they are more aware of how to tackle community needs systematically than they were before the project started. There have also been at least 2 reported manifestations of changed attitudes and approaches to community problem solving. The written proposal for school construction prepared by the IDC members from Gaaundudu, without prompting or assistance, included detailed specifications which demonstrated improved planning skills. A person on Ugulu who had not attended the first of IHAP's three school planning meetings and who objected to the time being spent in problem solving discussions during the second meeting, was overruled by a peer who gave a cogent set of reasons why such discussion was needed. Both examples demonstrated that the previous lessons had been absorbed and retained even after several months had elapsed since exposure to the new ideas.

The way in which this awareness will be translated into future development activities will reflect the great variation from island to island in the dominance, ability and motivation of the Katoob and of the Committees. In the course of project implementation this variation has resulted in varying degrees of community cooperation, and island interviews have indicated that the majority of the population has demonstrated little direct exposure to or understanding of "problem solving" methods which will enable them to proceed without the full backing of these foci of power.

A problem which has arisen with regard to instilling CBIRD lessons in the IDCs has been the lack of continuity in IDC membership. At the beginning of the project, the membership of IDCs and Island Offices (the latter being government administrative staff while the former were government-appointed (in some cases voluntarily) members of the general public) did not overlap. The managers' work with the IDCs led the Island Office staff to feel excluded and unable to perform the controlling responsibilities given to them by GRM. After about 1 1/2 years of this tension the IDCs were dissolved by GRM and reconstituted to include office staff as well as office-appointed members of the general public. The result of these changes has been that many IDC members have derived less benefit from the learning process initiated by the project managers. Many of the new members even appeared to be unsure of their role and function as IDC members.

A community development activity which should be noted here is the project's quarterly publication of an atoll newsletter. After initial problems, resulting from lack of adequate information regarding clearance procedures, newsletters were distributed to the Island Offices and IDCs around the Atoll. These newsletters appear to have been useful in keeping the direct recipients informed

of project activities. But in only a few cases were the newsletters read to public gatherings. Our interviews indicated that knowledge of the existence of the newsletters, let alone the content, did not reach the wider community. Given the attitude and traditions in the islands toward hoarding of potentially useful knowledge, the IDC and "Office" members (the only ones to receive a copy of the newsletter) could not be relied on to disseminate the newsletters' contents.

Aside from the newsletter, the other expected contributor to what the managers referred to as "atollism" (Eight Months P.R., p.6) was the formation by GRM of the Raa Atoll Development Committee whose membership is drawn from among Kaaheobs and chairpersons of Womens' Committees. So far, as demonstrated in the earlier discussion regarding the RATC, the RADC has failed to prove itself as a "development promoting" local organization.

There has been a marked difference in the responsiveness of women as compared with men to IHAP's initiatives. This reflects the reticence which has been culturally imbued in Maldivian women. The project managers made a reasonable effort to involve women in decision making⁶ and the women interviewed expressed their satisfaction with the health, water and education measures introduced by the project. But it will take a longer and more concerted culturally sensitive effort to stimulate women to take an active part in decision making and to take initiative in non-traditional activities.

6. Their efforts to meet with womens groups and to organize women's activities are chronicled in QPR 2, p.9, QPR 3, pp.5 & 8, QPR 4, pp.6 & 13, QPR 7, p.3 and QPR 11, p.5.

Considering now, the impact of the project on GRM development strategy, GRM has adopted the project managers' procedure for obtaining islander commitment to participation in school construction through a written contract. In addition, the government's acceptance of two more IRD projects to be implemented by PVOs with CBIRD philosophies (Redd Barna and Save The Children) may be taken as an indication of satisfaction with the results of the IHAP project. These projects are to be coordinated by the NIRDPCC, which will no doubt benefit from the previous experience of the Raa Atoll Project Coordinating Committee.

If the Atoll and Island Chiefs and the Atoll and Island Development Committee members are to truly become active promoters of community services for the island public, GRM will have to adopt a more intensive program of training to expose them to new ideas regarding ways of improving the welfare on their islands. This training should be based on a clear articulation of the GRM's conception of the meaning of CBIRD in the Maldives. GRM should consider holding a CBIRD workshop attended by senior and middle-level officials from all relevant Ministries, to develop and to discuss CBIRD policy and its implementation. In addition, the Atoll and Island Chiefs and Development Committees will require technical advice on improved management, construction methods and maintenance of community services.

It can be concluded that the approach to self-help development which was selected by the project managers was the most suitable one within the Maldivian context. While working through the existing institutions they attempted to introduce new ways of thinking about meeting community needs using locally available resources. However, after 3 years all that could be realistically expected is that seeds have been sown. Some germination has begun to take place, but whether a spirit of initiative will thrive will depend to a great extent on how it is nurtured by the Government of the Maldives.

VIII. PROJECT BUDGET, ADMINISTRATION, REPORTING & EVALUATION

Method.

The evaluation team was not requested to do a formal audit of the project's finances. Therefore, this chapter offers instead an overview of the adequacy of the budget and the way it was allocated. It also discusses the general support provided to the managers by USAID, IHAP and GRM and the logistics of project operation. The details of the strategies adopted by the managers in terms of allocation of time and funds for specific activities have been discussed in the previous relevant chapters. The final sections of this chapter review the reporting undertaken by the managers and discuss the experiences with evaluation of the project. Recommendations are made for the design of future evaluations including a follow-up evaluation of the IHAP project in Raa Atoll.

Budget.

Table VIII.1 presents a summary of the budgetary changes and allocation of funds for the project over the period 1982-1985. The original Operational Program Grant (OPG) budget (following amendment No. 2, 1982) was for \$ 500,000. This sum was increased to \$ 600,000 in 1984 to cover a 6 month extension of the project. Approximately 53% of the value of the increment¹ was required to cover added personnel and administrative costs, 33% was for a solar unit for the regional hospital and for commodity procurement associated with the construction of water catchment tanks and latrines, and 16% was for the cost of (past and anticipated) school construction (E.P., p.14). As at January 27, 1985, \$ 37,045 of funds administered in Maldives were still

1. Prior to deduction of the savings of \$ 5,750 from the agriculture and income generation budget line.

Table VIII.1: Project OPG Budget Allocations 1982 and 1984 and Expenditure in Maldives to 27 Jan. 1985.

	Total OPG Budget				1984 OPG Budget Administered By IHAP/Maldives			
	Budget 1982 as per Amendment No.2 to current OPG		Budget 1984 as per Extension Proposal		Budget		Expenditure	
	\$	%	\$	%	\$	%	\$	%
A. Technical Assistance	164,350	33	216,510	36	46,450	15	42,402	15
B. Land, Equipment, Materials	22,000	4	26,350	4	23,950	7	22,154	8
C. Health Service Support	100,000	20	132,750	22	132,750	42	124,831	44
D. Agriculture/Income Generation	75,000	15	69,250	12	69,250	22	47,903	17
E. Other Program Activity	29,550	6	46,040	8	46,040	14	44,105	16
F. IHAP Back-stopping	109,100	22	109,100	18	-	-	-	-
TOTAL	\$ 500,000	100%	\$ 600,000	100%	\$ 318,440	100%	\$ 281,395	100%

source: Project Manager. See Appendix 8. Table A for details of Subline Items.

not spent by the project. However, it is anticipated that \$ 12,685 will be disbursed for the loan fund. A proportion of the remainder will no doubt be used to cover project operating costs in the 1 to 3 months remaining before the project is concluded.

53% of the total extended OPG budget was administered by the project managers for expenditure in Maldives. The remainder was handled by IHAP/New York and no information was available to the evaluation team regarding the disposition of these funds.

Table VIII.2 indicates that USAID OPG funds represented 47% of total project expenditure in Maldives. If the value of the IHAP contribution² and other donor contributions³ are added together, total foreign donor contributions represented 74% of the value of expenditure and contributions in Maldives. GRM and Raa Atoll beneficiaries contributed the balance of 26%.

Table VIII.3 shows that the bulk (64%) of total expenditure and contributions went on health service support (hospital, water tanks, latrines). "Other" program activities (essentially school construction) came next with 14%. The proportion allocated to agriculture and income generating activities (primarily \$ 38,315 for the loan fund) is currently 9% but will increase to just under 11% when all the loan funds are disbursed before the end of the project. Technical assistance, land, equipment and materials (13% of resources administered in Maldives) covered the cost of local staff.

-
2. \$ 135,000 in health support, including:
- | | |
|----------------------------|------------|
| Packaged Disaster Hospital | \$ 120,000 |
| Drugs | 5,530 |
| Poolhuma Training Program | 10,000 |

3. \$ 26,100 from VSO (Volunteer support), UNICEF (nurse-aids training, equipment and drugs), and WHO (Poolhuma Kits).

**Table VIII.2: Total Project Expenditure and Contributions
to 27 January 1985**

<u>Foreign Donors</u>		
USAID	281,395	47
IHAP	135,530	23
Other	<u>26,380</u>	<u>4</u>
Subtotal	443,305	74
<u>Local</u>		
GRM	104,096	17
Beneficiaries	<u>52,035</u>	<u>9</u>
Subtotal	156,131	26
TOTAL	\$ 599,436	100%

source: Project Manager. See Appendix 8, Table B.

**Table VIII.3: Allocation of Total Expenditure & Contributions
in Maldives to 27 January 1985**

	\$	%
A. Technical Assistance	52,258	9
B. Land, Equipment, Material	25,739	4
C. Health Service Support	383,700	64
D. Agriculture, "Income-Generating" Activities	52,269	9
E. Other Program Activities	85,470	14
F. Back Stopping	-	-
TOTAL	599,436	100%

a. Of which: Loan Program \$ 38,315
 Agriculture \$ 13,954

source: Project Manager. See Appendix B, Table B.

logistics and administration associated with the various project activities.

The principle reallocations of line item funds in the course of project implementation were from agriculture (\$7,025) and the loan fund (\$9,000) to "other" (basically schools). These changes were approved by GKM and USAID. Other changes in expenditure within the line items reflect the relative emphasis given by the project managers to each activity (See Appendix 8, Table A, for details). This relative emphasis has been discussed in the relevant chapters earlier in this report.

Other significant differences from the original budget as far as sub-line items are concerned are the greater than anticipated expenditure on dhoni fuel and maintenance and Male' housing. These differences reflect bad luck (and poor advice) with dhoni purchase and the need for a Male' base. The increased costs were covered out of contingency funds.

With the exception of a delay caused by misunderstanding between IHAP/M, IHAP/NY and USAID/W after the project extension was agreed in 1984, the managers reported no problems with late arrival of funds for their use in Maldives. The delay that did take place caused some difficulties with obtaining materials for latrine construction.

The managers themselves appear to have been careful in their budget management. As stipulated in the P.P. the project accounts were subjected to an audit about mid-way through the project. The audit covered the period January 1, 1982 - June 30, 1983 and was conducted by Thornton, Panditarathna & Co., Chartered Accountants, Male'. An end of project audit will be conducted by the same firm.

It would appear that, given the amount of funds available for direct employment of project managers, time and availability of suitable local staff, rather than additional investment funds, were the greatest constraints to the achievement of project objectives. The inability (due to non-response) to recruit a second Maldivian assistant and the shortage of suitably trained staff capacity in the cooperating ministries increased the time the managers had to allocate for administration and the supervision of each activity they undertook. The managers also faced logistical problems associated with inland travel as well as poor communications with Malé and the rest of the world. Dealing with these made significant inroads into the time they had available for other activities.

Administration, Coordination and Logistics

The newness of this particular type of project also caused delays as both the managers and their GRM counterparts had to learn the administrative procedures and government regulations corresponding to the project by trial and error. The level of inter-ministerial coordination required was unprecedented. Misunderstandings and conflicting interests sometimes prevented concerted action.

The establishment of the Raa Atoll Project Coordinating Committee (RAPCC) (the predecessor of the National Integrated Rural Development Project Coordinating Committee) broke new ground in the governmental administration of integrated rural development projects. Here too the novelty of the project and the managers' approach resulted in some misunderstandings and false starts. But in general it provided a useful forum for discussion and consultation between managers and ministry representatives regarding project implementation. It is unfortunate that the same level of project manager participation in governmental discussions regarding the IHAP project was not maintained after the

formation of the National Integrated Rural Development Project Coordinating Committee (NIRDPC).

On the whole the logistical support provided to the project managers by the Ministry of Atolls Administration appears to have been satisfactory. However, particularly at the beginning of the project, the managers would have benefited from more continuity of contact with their NAA counterpart officer.

All the officials interviewed in GRM ministries and USAID have expressed their satisfaction with the management of the project and they have given the managers high praise for their hard work and dedication.

Both the GRM and the project managers have benefited from this experience. The lessons learned should contribute to more efficient project implementation both in Maldives and wherever the project managers should next be employed.

Reporting and Technical Back-Stopping

The project proposal required that quarterly progress reports be submitted to USAID and that regular reports be made available to the Maldivian Government through the Ministry of Provincial Affairs (later the Ministry of Atolls Admin.) (P.P., p.24). The proposal also provides for IHAP representatives from Colombo and New York to make periodic visits to Malé and Raa Atoll "to review the overall progress of the work and to help work out difficulties that may arise along the way" (P.P., p.24). These were sensible provisions and they were, with the exception of visits from the IHAP/Colombo representative, - (whose responsibilities were changed by agreement between the project managers and IHAP/NY), carried out more or less as anticipated.

While the completion of quarterly reporting was a

time-consuming task, the project managers carried it out punctually and conscientiously. Their reports will have kept a careful reader fully informed of the progress of project implementation. These reports also provide an invaluable chronicle of the process involved in initiating and carrying forward a venture which was without precedent in the Maldives.

In addition to the quarterly reports the project managers prepared a baseline survey report. The baseline survey represented a useful point of departure for the project managers. The use of qualitative information derived from their interviews plus limited statistical data provided by the Island Offices were adequate for the managers' purposes. However, the absence of quantified baseline information on water quality, infant and maternal morbidity and mortality, and incidence of diarrhoea and other intestinal diseases means that it is still not possible to track the projects' medium term impact in these areas. The collection of data on these health indicators should be formalized immediately. However, rather than add still more to the government's data collection burden, assessment of the project's impact in other areas, such as education, agriculture, income generation and CBIRD, will have to rely on the types of data already being collected and make use of proxy indicators. The census (now being planned with foreign technical assistance) should yield information that will be useful in future evaluations provided that the data are disaggregated by atoll, and, preferably, by island.

The project managers' interim report on the Maldivian Ash Toilet is clear and succinct and it a valuable contribution to improved sanitation in the Maldives.

At the time of this evaluation the managers were beginning analysis of two end-of-project surveys. These cover health services (particularly FIW activities) and Island

Development Committees' project assessment and future plans. The results should be in the managers' final report.

All the parties who received the managers' reports said they were satisfied. It would appear however, that, other than words of general encouragement, the project managers received very limited substantive feedback regarding their reports and activities either from IHAP or USAID/W. It should be said, though, that the managers did feel that they benefited from the person-to-person meetings they had with USAID personnel in Colombo. USAID advice regarding the loan program was also helpful. The managers may have benefited if they had received in writing, more considered responses from GRM to their reports.

Evaluation

The P.P. stipulated that an overall project evaluation would take place at the completion of the first year of the project and that a final summary review and evaluation would be undertaken at the completion of the project. The grant agreement was amended to state that these evaluations would be conducted by a tripartite team composed of representatives of GRM, USAID and IHAP.

The mid-term evaluation took place September 3-15 1983. The team was dominated (both in number and influence) by representatives from GRM. The report therefore provided the GRM participants with an opportunity to document their misgivings regarding the approach and some of the activities (particularly the promotion of the MAT) of the project managers. The evaluation suffered from lack of analytical rigor, and the tone of the evaluators' questioning of islanders may have caused the project managers a temporary set-back in their work in the islands. But the evaluation did serve a useful purpose in making explicit certain basic differences regarding project methodology and philosophy

which existed between some representatives of GRM and the project managers. The project managers and GRM found a way of working through these differences and by the end of the project everyone interviewed in GRM seems to have been pleased with what the managers have achieved.

The following observations and recommendations can be made regarding the design of the evaluations. It was desirable to have all three of the principal parties concerned with project implementation (GRM, USAID, IHAP) involved in the review of the project's performance, but the way the tripartite review team was constituted and organized caused problems in report preparation at the time of the mid-term evaluation. Lack of a clear understanding of who would be leading the team and why the person was selected, failure to ensure that team skills were complementary and that responsibilities were efficiently distributed among team members, and the absence of uniform expectations regarding reporting procedures and content all contributed to dissatisfaction (at least within USAID and IHAP) with the mid-term evaluation. The same difficulties, as well as an inefficient duplication of efforts, could have arisen in the final evaluation if there had not been the fortuitous combination of a compatible, flexible, independently-minded yet cooperative team.

In future, a clear distinction should be made between monitoring and supervision (which should be a continuing activity of each of the implementing organizations) and evaluation (which should be undertaken by an independent and coherent team with a single leader and a single report to produce).

Although there is no inherent reason why each of the implementing parties should not contribute a member to the evaluation team, the members should be chosen on the basis of having complementary training, skills and duties; and they should work under the direction of a clearly designated leader. For the sake of making use of knowledge and

insights gained in the mid-term evaluation, it is desirable to have the same team also do the final evaluation.

Fortunately only one scope of work was presented to the final evaluation team members.⁴ This was the scope prepared by USAID/Col (with USAID Attachment B: "Outline for Evaluation of PVO Field Support Grants" as an additional guide). Although this scope of work provided some useful indications regarding the types of questions the team should address, the questions were generally too vague and poorly structured to assist the team, working under a tight timetable, in organizing their work. Future scopes of work should be more rigorous in their application of evaluation terminology (inputs, outputs, purposes, goals, objectives, etc.). The scope of work could be usefully organized around the logical framework, with evaluation questions located under the relevant headings.

When considering the appropriate length of time which should be allowed for an evaluation, it should be remembered that the complexity of the project rather than the size of the project budget affect the time required for a thorough study. Many subjects and activities were covered by the project proposal and even if the actual achievements were somewhat more narrowly focused, it was necessary to explore and explain anticipated activities which did not take place as well as those that did. Consequently a wide range of documents had to be consulted, and people interviewed, to cover the fields specified in the proposal.

The two weeks considered at one stage for the evaluation would have been grossly insufficient. In order to complete this report within a period of 39 working days the team had to work very long hours (frequently by kerosene lamp and/or candle light). The time was allocated as follows:

4. Given that each of the members was independently assigned to the team by a different organization, this might not have been the case.

Table VIII.4 : Allocation of Time on Final Evaluation Mission

	<u>Work Days</u>
Briefing and Document Review/Colombo	3
Meetings in Male ⁵ (Beginning and end of period in Maldives)	2½
Discussions with Project Managers and Review of Files	2½
Island visits	7
Report Drafting in Ugoofaaru	1½
Report Drafting in Male ⁵	3½
Report drafting in Colombo	6½
Typing, Duplicating, etc.	<u>7½</u>
<u>Subtotal</u>	31
Travel (International and within Maldives)	<u>5</u>
<u>TOTAL</u>	<u>39</u>

It would have made the team more efficient if five rather than three days had been allowed for briefing and document review so that they could have been less rushed in their preparation for ministerial interviews and departure for the islands. Also more time should have been allowed for the ministerial interviews themselves. This would have made possible a greater depth of questioning than could occur in sessions of half-an-hour to forty-five minutes. A careful selection of islands may have yielded valid results with visits to only half of the 16 islands. However, it would have been necessary to spend more time devising a suitable basis for selecting the sample.

One-half of the total time has been dedicated to report drafting,⁵ typing and final compilation. This proportion

5. Actually more than this, since report drafting began half-way through the island visits and was the regular night time activity for the rest of the time spent in Raa Atoll.

could not, and in future should not, be reduced. In fact, an even more polished (and possibly more succinct) report could have been prepared if three or four more days had been available.

There was no provision of time or funds in this evaluation for a draft report to be circulated to GRM, USAID and IHAP for their comment prior to presentation of the final report. The logistics of such an arrangement (when evaluators must proceed with other commitments) could be difficult, but the interested parties might find it useful to invest in such a procedure.

It is hoped that this final evaluation report will represent another useful contribution to the lessons that can be learned from the IHAP project.

It has been stressed throughout this report that the IHAP Raa Atoll Integrated Development Project represents only a beginning. It will take some time and follow-up by both the islanders and GRM before the full impact of the project can be assessed. It is therefore recommended that an evaluation be undertaken in Raa Atoll in 1988 (3 years after project completion) to determine whether the results anticipated have been achieved and what improvements could be made. Collection of the health data referred to earlier should be undertaken regularly in anticipation of this evaluation. A draft outline for such an evaluation is presented in Appendix B.C. The proposal allows for 50 elapsed work days and a team of 2 consultants and 2 representatives of GRM. The estimated budget is \$ 34,200.

Lessons have already been learned from the Raa Atoll Integrated Development Project. This learning is evident in the formulation of the Faaf-Dhaal Integrated Atoll Development Project proposal. In this proposal the explicit statement of project objectives at all levels within the logical

framework, the use of in-depth knowledge of the project location and fields of operation, and the presentation of a coherent strategy explicitly founded on the active participation of the community in all aspects of project implementation, all attest to the demonstrated ability of the project managers and GRM to transfer their new knowledge to the design of an improved project.

IX. CRITIQUE OF THE LOGIC AND PHILOSOPHY OF THE PROJECT

Method

We evaluated the logic of the project by examining the original and extension proposals and Quarterly Progress Reports as well as by holding discussions with the project managers, for evidence of anticipated project linkages. From this evidence we constructed a flow diagram, modifying the format of the logical framework presented in Table II.1. This flow diagram was a useful tool for assessing the validity of the assumptions behind the linkages, as well as the coherence of the activities undertaken by the project managers. The development philosophy underlying the assumptions was considered with this assessment.

Project Activities

THE LINKAGES BETWEEN PROJECT ACTIVITIES

To examine how the project activities fit together into a coherent whole, and whether that "whole" contributed as expected to the project's stated goals and purposes, we have first grouped all the 19 major activities into 6 categories (See Table IX.1).

An integrated rural development project attempts to combine an array of activities so that several key sectors are simultaneously assisted in a rational, coordinated manner. The 19 activities of the IHAP project were designed to support the GRM's objectives for Atoll development in health (including nutrition), education, agriculture and income generation.

The national goal of improved standard of living in the atolls has two major components, health and income. The purpose of both agriculture and education (apart from

Table IX.1: Project Activities (By Category)

Health

Hospital Construction
Manpower Training
Water Tank Construction
Latrine Construction
Intestinal Parasite Eradication

Agriculture

Post Eradication
Gardening Training
Reforestation
Agricultural Extension Worker Hiring/Training

Education

School Construction
Teacher Training
Raa Atoll Training Centre
Other Activities

Income Generation

Loan Program
Manpower Training

CBIRD

Awareness-raising
Leadership Training

Reporting, Administration & Evaluation

Internal
External

(source: Evaluation Team)

Koranic education) in the Maldivian context is the improvement of health and income levels. The project activities can be shown to contribute to the objectives of the project, jointly agreed upon by the GRM, IHAP and USAID, and the goals of the GRM as shown on Table IX.2.

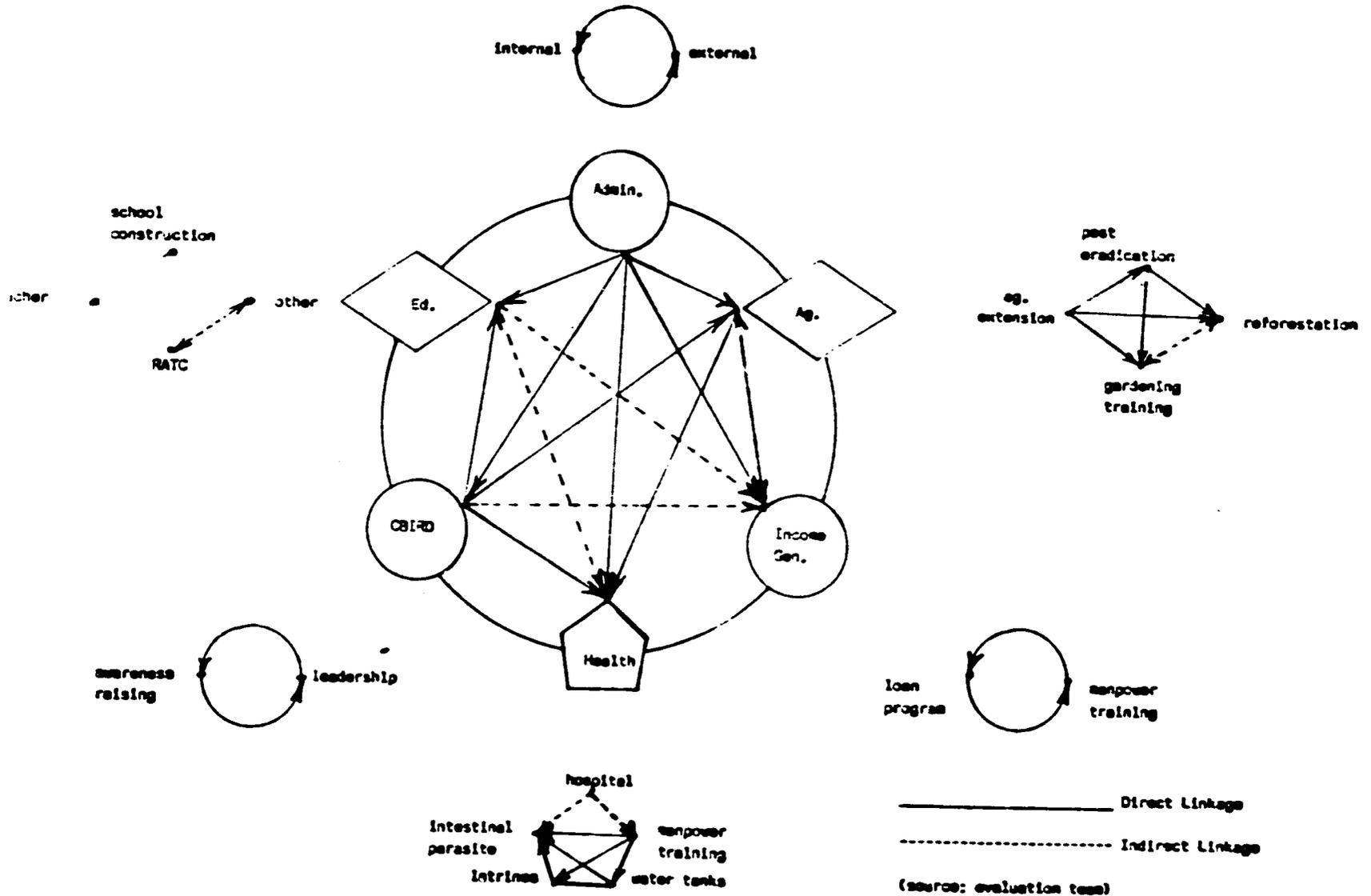
Health, agriculture, education and income generation activities are designed to directly strengthen or create, institutions and infrastructure. CIRD and Reporting/Administrative activities ensure that those in the other 4 categories will:

- continue to improve levels of service and responsiveness to the community.
- develop procedures for regular self-evaluation and assessment.
- be documented, disseminated and understood.
- involve the community in the following ways:
 - o maintenance, expansion, extension and repair of facilities.
 - o input into decisions that affect them directly
 - o sharing of knowledge.

It is important to appreciate the degree of integration suggested by examination of these categories of activities:

- health activities directly influence health institutions, infrastructure and objectives and indirectly influence income earning power by helping to increase life expectancy and productivity (due to decreased absenteeism and illness).
- agriculture activities directly influence agricultural output which in turn can lead to better and more plentiful diet (which supports the nutritional aspects of the country's health objectives) and to higher income (from the sale of agricultural surplus).
- educational activities improve the quality of education which means that products of the educational system will be more literate, analytical, rational and insistent on quality education for their offspring. Better educated islanders can more easily

Table D.2: Linkage Flow Diagram



understand the link between nutrition and sanitation habits and illness. They can more easily understand the importance of preventive practices, and when to seek curative help. Education, therefore, directly supports the government's health objectives. Better educated islanders are more likely to innovate, take risk, and engage in formal planning and budgeting and take advantage of opportunities. Because these qualities are key success factors in most income-generating activities, particularly small, entrepreneurial start-ups, education directly supports the government's income-generating objectives.

- Income-generating activities are designed to provide the skills and capital to directly support the income improvement objectives of the government. In the medium and long term, it has been shown elsewhere that increases in income can lead to purchase of more and better quality food and health supplies. Income-generating activities therefore support, at least indirectly, the government's objective of improving the health and nutrition of the islanders.
- CBIRD and Reporting/Evaluating/Administration activities, because they affect the functioning of all the other categories of activities, contribute indirectly to each of the government's objectives for the project.

The 6 categories of activities appear to be both necessary and sufficient, given adequate time, to address each of the government's key sectors, as identified for this project.

Many of the individual activities reinforce other activities, both within their category and across categories. Some of the more important reinforcing relationships are illustrated below:

Within Categories

- better trained health personnel (manpower training) can effectively screen patients to ensure optimal contribution of the new hospital, to the community.
- water tank and latrine use help to dramatically reduce intestinal parasites in islanders.
- the eradication of pests encourages more people to plant crops which in turn increases interest in gardening training and demand for technical assistance from agricultural extension workers.
- training of teachers complements school construction. Both improve the quality of education for school children. One provides a better learning environment, and the other, better instruction.
- training of loan officers in credit analysis and business planning improves the accuracy of loan applications received. It also imparts new financial skills to the community.
- leadership training imparts skills that allow islanders to undertake awareness-raising for themselves.
- regular detailed reports provide a useful data resource for evaluation teams.

Across Categories

- reforestation increases tree fruit and timber yields per hectare, providing more produce for sale, which will lead to increased income.
- PHW training undertaken in the Raa Atoll Training Centre teaches these health workers how to raise the community's awareness regarding water borne disease and how they can minimize its effects.
- the roofs of the school buildings drain into the water tanks.

The existence of these reinforcing relationships indicates an awareness on the part of the project drafters and managers of the economies that can be realized in an integrated development project. For example, buildings can serve multiple uses (e.g. school buildings and RATC) and personnel (in health) can be used to convey multiple messages (rat eradication and intestinal parasite eradication).

None of the 19 activities seems inappropriate or inconsistent with the government's goals. With the exception of the intestinal parasite program, discussed below, the activities originally proposed, to whatever degree actually undertaken, do form a cohesive whole, both inside the categories in which they fall, and viewed together as an integrated implementation package aimed at addressing manageable problem areas within certain key sectors of the government.

The Phasing of Activities

As described in detail in earlier chapters, the project managers phased activities in a rational and pragmatic manner. Several examples will serve to illustrate this.

The construction of the hospital was undertaken at the beginning of the project. This served 5 purposes. It ensured that the hospital completion — one of the most convincing tangible measures of project success — would be accomplished before the end of the project.¹ It created credibility with the government, which, to that point had no indication of IHAP's competence in development assistance. It generated good-will with the islanders, who saw that the hospital benefitted all segments of the populace and brought prestige to their atoll.² It expedited the project managers' eventual

1. Even with an early start, the hospital only opened in April 1984, just 34 months before the original termination date for the project.

2. Only one other outer atoll at the time had a hospital.

liberation from support of a project which was exceedingly time consuming, to the neglect of other important activities, and which through its use of contract labour, was inconsistent with the community participation approach to public works projects. It proved an excellent familiarization project for the managers themselves. By its conclusion, they had acquired a range of diverse skills, insights, and contacts that would prove extremely useful in other project activities.

School construction was identified by the islanders early in the project as an urgent need. Even though this activity was not among the original list of activities at all, it was added and work quickly begun. The decision to make school construction one of the first activities undertaken demonstrates the project managers' good judgement. It was appropriate to build schools before, for instance, offering gardening training. The islanders had expressed a strong interest in school construction. The involvement of the community in planning the activity and in the mobilization of resources set a positive precedent for later activities that solicited similar community participation in activities with less immediate appeal. The community appeared unanimous in its belief in the intrinsic value of having new schools. Schools clearly benefitted the community as a whole without focussing on any sub-group. School building complemented hospital building as regards skills required by the project managers. This meant that successful accomplishment of this activity was more certain than completion of others requiring different skills, might have been. This success created a certain momentum that made interest and success in later activities more likely.

Latrine construction is an example of an activity that was consciously phased into the later stages of the project. The public had strong aesthetic, cultural and social predispositions regarding defecation. These were correctly judged by the project managers to be attitudes

that had to be fully understood before any convincing appeal could be made for adoption of the never-before-seen Maldivian Ash Toilet. By not undertaking toilet construction in the early life of the project, thorough study into alternative methods of designing non-contaminating latrines was possible. This resulted in a rejection of the projects' original mandate to build community latrines, after they were found to be ecologically and structurally unsuitable. Instead, an "appropriate" latrine was developed, modified to the tastes, habits and architecture of Maldivians in their rural island environment.

Adoption is now beginning to pick up dramatically, highlighting the importance of allowing for a gestation period when introducing new technology. Unfamiliar concepts were permitted to gain gradual acceptance without pressure from the project managers. This has demonstrated the importance of social and cultural sensitivity when planning the phasing of different activities in an integrated development project.

The importance of correct phasing is illustrated in the linkages found in 11 project activities:

- loan officers had to be trained before the loan program could commence.
- pest eradication should have occurred before gardening and reforestation activities, (to minimize damage to crops).
- school construction should have preceded water tank construction since the school roofs were the primary catchment surfaces for rain water.
- health manpower training, tank construction and latrine construction all had to precede any intestinal parasite eradication program, if such a program was to have maximum impact.
- community awareness-raising, broadly interpreted, had to precede school construction, pest eradication and water tank construction.

All five activities summarized above, that begin sequences, are different from each other. This highlights the complex phasing required in a multi-sector multi-activity project. Skillful integration of these sequences so that they are mutually reinforcing and non-duplicative distinguishes a successful IRD project from a loosely-structured amalgam of unrelated initiatives.

The project managers were successful in balancing the timing requirements of the project in all areas except agriculture, where the number of activities that had to precede intestinal parasite eradication was too great, and where the pest eradication program did not precede the gardening and reforestation programs as it should have. The project managers could not have been reasonably expected to have pursued all the agricultural initiatives stipulated, given the long lead time required for each, and given the difficulty in achieving significant gains in this particular sector in a Maldivian context.

No significant avoidable project set-backs were the result of poor decisions regarding timing and sequencing of activities.

The Target Group

Both the original project proposal and the extension proposal identify the project's target group to be, simply, "the inhabitants" (P.P.,p.3, E.P.,p.1) of Raa Atoll. Selection of the correct target group can be a critical element in project success. Because of similar levels of living, lack of ethnic differences and absence of political parties among the islanders, targeting the entire community was a workable strategy in this project. No sub-group existed that could have benefitted more from IHAP's attention (given the development philosophy of the project managers) than it did through IHAP's philosophy of trying to involve the

entire community in its activities and programs. In fact, by making community participation and decision making a central element of their approach without further distinction, the project managers were acknowledging the right of all members of the community to partake in and benefit from the IHAP activities.

Targeting an atoll, rather than some larger or smaller geographic or administrative entity probably reflected political considerations beyond IHAP's control. In striking a balance between spreading technical assistance too thinly for it to effectively address islanders' needs and depriving too large a group of access to the benefits of such a technical assistance project, an atoll-level project was an acceptable compromise.

Their method of allocating time among the islands combined 3 criteria: the interest shown by the island, the relative level of neglect from other government or foreign assistance and the size of the island, with small ones being emphasized over large ones.³ These criteria should have permitted some focus on the most needy and most interested islanders. Since different islands responded enthusiastically to different activities, with few exceptions (cf. schools) no economies were realized by the project managers' strategy of targeting islands. Ultimately, all 16 required nearly equal attention and visitation (Kandholudhoo received less). If the political necessity of targeting CBIRD projects at the atoll level were not a constraint, a smaller grouping, perhaps a single island, perhaps a group of 3-4 adjacent islands, would be a more appropriate target area.*

3. This is a reflection of the fact that the larger islands had traditionally been the wealthier and had usually received a disproportionate share of government assistance.

* See dissenting comment at end of chapter.

Table IX.3: Duration-of-Project Trade-offs

<u>Party</u>	<u>Short Duration</u>	<u>Long Duration</u>
GRM	<ul style="list-style-type: none"> - less time for infrastructure to be created. - assuming loss of control, can regain control from PVO quickly. - heavy investment of time in coordination before a routine is established. - islanders don't yet know how to articulate their desires to government. 	<ul style="list-style-type: none"> - greater infrastructure & material transfer to the atoll. - control takes longer to regain. - standard operating procedure in place smoothing communication & coordination. - with heightened awareness, islanders make more demands on government for increasingly costly/sophisticated follow-on goods, services & assistance.
IHAP	<ul style="list-style-type: none"> - can pull out of an undesirable environment with fewer high sunk costs. - convenient way to remove unacceptable project managers. - does not allow sufficient time for problem resolution. - does not provide buffer for a gestation period prior to an activity's "take-of" . - does not allow for smooth transition at midpoint for a second set of managers. - insufficient time for CBIKD ideology and activity self-sustainability to take hold. - insufficient time to perform adequate baseline and end-of-project surveys. 	<ul style="list-style-type: none"> - higher sunk costs. - either situation deteriorates with poor managers or abrupt and costly transition to new managers is required. - does allow time. - does provide buffer. - does allow. - sufficient time. - sufficient time.

The Project Managers

Choice of project managers was a critical success factor in the Raa Atoll CBIRD project. The original proposal spells out accurately the importance of the choice and the desired qualities the selected couple should possess. (P.P., pp.19-20). Bonnie Kittle and Peter Buijs were as close to ideal people for the project manager positions as IHAP could have ever hoped to have found. The large measure of success that the project enjoyed in spite of its flaws is due primarily to their untiring efforts.

In the future, similar projects cannot count on duplicating their particular mix of personality traits and skills. A project must be designed so that an average management team can achieve results equal to those of Bonnie and Peter. This will require better support from the participating parties and increased care in the drafting of the original project plan.

Particular attention must be paid to the project managers' mix of skills. Bonnie and Peter's selection by IHAP is evidence that IHAP is aware of this. The project may have had a very different emphasis, but equal success if the project managers had been experts in agriculture and small business development, rather than civil engineering and maternal and child health. Many combinations of skills can be equally reasonable and appropriate. Project drafting parties should be sensitive to the range of skills from which they can choose.

Length of Project Life.

There are trade-offs for each participating party regarding project length that must be clearly understood at the project design stage (Table IX.3 gives an outline of factors for consideration). The IHAP project, though

Table IX.3: Duration-of-Project Trade-offs (Cont'd)

<u>Party</u>	<u>Short Duration</u>	<u>Long Duration</u>
ISLANDERS-	can quickly get rid of IHAP if the 2 parties don't get along.	- cannot.
	- lose out on added technical assistance, material, services & skill transfer.	- gain added tech. assistance, etc...
	- with no "feet dragging" from either party islanders get benefits sooner.	- greater chance for "feet dragging" delaying receipt of benefits.
USAID	- lower sunk costs if project unsuccessful.	- higher sunk costs.
	- desirable length for a pilot project testing new development approaches.	- possibly unjustifiably costly for a pilot project.
	- less credibility due to perception of others of project failure (due to their equating brevity with failure).	- gain credibility (unless project fails).

(source: evaluation team)

extended, first by 6, and later by 2 months, was still 1-2 years too short for achieving the targets set out in the extension proposal (B.P.,pp.9-10).

A project with narrower purposes could be successfully completed in a 3 year period. While recognizing that narrowing project scope can decrease some of the benefits to the community, it can also focus the project, increasing its impact.

The IHAP project, once under way, did narrow its range of commitments by dropping agricultural extension training, community latrine construction and intestinal parasite eradication programs from its agenda, but these measures

were insufficient. In spite of the best of efforts and intentions, 3 years proved insufficient to generate the desired results. Rather than trading off incremental project duration increases and incremental project activity array decreases, in this case, duration should have been increased and the array of activities narrowed.

Flexibility

The project managers maintain that a project following the CBIIRD philosophy is by nature flexible and cannot be viewed as a contract. The mid-term evaluation team reiterated this position when it wrote that "the original project proposal was designed to be flexible so that modification in project outputs could be included when necessary" (Mid-term Tripartite Evaluation, p.9).

It is not reasonable for the drafting parties to insist on rigid adherence to predetermined targets, outputs and methods if such adherence cannot be enforced. An optimal degree of flexibility is achieved by assessing and adjusting for :

- the amount of experience of the participating parties in implementing and supporting this type of project.
- the competence of the managers.
- the amount of initial consensus among all parties including the beneficiaries, with regard to the purposes, objectives and inputs of the project.
- the complexity of the technology and skills being transferred.
- the number of activities being pursued.

Drafting parties must be conscious of the difference between a document that incorporates elements of flexibility and one that is merely poorly drafted. The original project proposal for the Raa Atoll project had elements of both. It could have been improved by inclusion of the following provisions :

- certain specified types of deviation and modification from or in the original project design must require explicit approval by all participating parties. The approval process must take no longer than some specified number of days (we suggest 21) for an approval or denial to get back to the project managers. This avoids holding up their work, and through use of telex and radio telephone is not an unreasonable deadline to impose on parties whose interest in the project should prompt rapid resolution of any issues that arise. In the absence of response within the required time, the project managers are free to act as they see fit. Issues that might come under this provision include :
 - o changes in activities undertaken.
 - o changes in pre-agreed output targets.
 - o changes in methods of measurements and verification of project success.
 - o overspending or funds shifting by more than a certain pre-agreed amount.
- scheduled visits at regular intervals, semi-annual by USAID and IHAP representatives, quarterly by a representative of each government agency involved in implementation. This frequency ensures close monitoring and regular feedback without disrupting project work significantly.

These controls do not severely restrict the flexibility, initiative and autonomy of the project managers, yet they force the participating parties to involve themselves in the project.

The Raa Atoll Project As A "Pilot" Project

The Raa Atoll project was designed as a prototype or pilot project. If successful, it could "then be used to design development assistance programs for other outer

atolls" (P.P.,p.3). At the very least the project was to "offer guidelines in development programing and help avoid potential development problems for the other atolls and for the government planning and implementing agencies" (P.P.,p.4). In addition, the project was supposed to help determine "the effectiveness of the community based integrated development approach in the Maldives" (E.P.,p.7).

As a pilot, more detailed quantified and reliable before-and-after data should have been collected.⁴ In the future, targets against which project success will be measured must be made explicit at the outset. These should be measurable and quantifiable where possible. A consistent methodology should be used to monitor the status of these targets throughout the life of the project (and beyond, since the benefits should continue after formal project conclusion). The project has nonetheless provided a basis for improved project design elsewhere in the Maldives.

Conclusions

The Raa Atoll Integrated Development Project underwent a maturation process during its short life. From a vague original proposal, refinement over time in the approach to problem-solving and decision making was evidenced in implementing agencies and beneficiaries alike.

The participating parties proceeded with the implementation of the Raa Atoll project on the basis of a shared assumption that the IHAP development approach had the potential to be better than any alternative approach. This assumption was reasonable based on IHAP's explanation of its

4. Though inappropriate for analysis of the project's measurable impact on quality of life in Raa Atoll, the meticulous documentation of the evolution of the project by the project managers will prove a rich source of information to later analysts. This body of data was, itself, worth the cost of the project.

capabilities and approach to GRM and USAID.

The mix of activities, development philosophy, and effort with which the project managers addressed the problems facing the inhabitants of Raa Atoll was fundamentally sound. We noted indications of the beginnings of increased islander awareness of what is required to bring about meaningful improvement in the quality of one's life. We also found heightened appreciation for the role community initiative can play in that improvement.

The Raa Atoll project, and the approach it employed, are at least as successful as traditional "top-down", externally directed, non-participative approaches. The tangible and intangible outputs of the project and the level of community input, clearly equal those of any project using an alternative development approach, a 3 year time frame and similar inputs. With respect to change made in people, rather than in their environment, the IHAP project has proven a better investment than a similar traditional development project would have.

Dissenting Opinion IX.1

(Dr. Nott) This doesn't make sense from any point of view (political, economic, social). It would never work, so better to improve staffing, logistics and phasing.

Appendix 1. A : List of Documents Consulted¹

1. AHSTC n.d. (1983?). Revised Syllabus for Family Health Worker.
MAV PTR 004 (Malé).
2. Ibid. n.d. (1983?). Syllabus for Community Health Worker.
MAV PTR 004 (Malé).
3. Bank of Maldives, Ministry of Atolls Administration, IHAP.
June 9, 1984. Letter of Agreement: Raa Atoll Loan Program
(Malé).
4. Buijs, Peter and Bonnie Kittle. May 1982 Raa Atoll Integrated
Development Project, Republic of Maldives: Draft Base Line
Data Study Report (Ugoofaaru: IHAP).
5. Ibid. 1982-1984. "Island Books" for 16 project islands in
Raa Atoll (unpublished manuscript).
6. Ibid. May 1982. First Quarterly Progress Report February
11-May 15, 1982. (Ugoofaaru).
7. Ibid. Aug. 1982. Second Quarterly Progress Report May 16-
Aug. 15, 1982^o (Ugoofaaru).
8. Ibid. Oct. 1982 Progress Report February 11-Oct 15, 1982
(Ugoofaaru).
9. Ibid. Dec. 1982. Third Quarterly Progress Report Aug. 16-
Nov. 15, 1982 (Ugoofaaru).
10. Ibid. April 1983. Fourth Quarterly Progress Report Nov.
16, 1982-March 31, 1983 (Ugoofaaru).
11. Ibid. July 1983. Fifth Quarterly Progress Report April 1-
June 30, 1983 (Ugoofaaru).

1. This covers principle reports but does not include files and
correspondence consulted.

12. Ibid. Oct. 1983. Quarterly Progress Report July 1-Sept. 30, 1983 (Ugoofaaru).
13. Ibid. January 1984. Seventh Quarterly Progress Report Oct 1-Dec. 31, 1983 (Ugoofaaru).
14. Ibid. April 1984. Eighth Quarterly Progress Report January 1-April 7, 1984 (Ugoofaaru).
15. Ibid. October 1984. Ninth and Tenth Quarterly Progress Reports April 8-Sept. 30, 1984 (Ugoofaaru).
16. Ibid. January 1985. Eleventh Quarterly Progress Report Oct.1-Dec. 31, 1984 (Ugoofaaru).
17. Ibid. October/November 1984. Interim Report on the Development of the Maldives Ash Toilet (Ugoofaaru).
18. Ibid. February 1985. "IHAP/Raa Island Briefing Sheets".
19. Ibid. February 1985. "IHAP/Raa Sanitation Fact Sheet".
20. FAO/World Bank Cooperative Program. July 1984. Maldives Production Promotion and Credit Project Preparation Mission (FAO: Rome).
21. Hunter, G. 1978. Agricultural Development and the Rural Poor (London: Overseas Development Institute).
22. IHAP. 1981. Proposal for the Raa Atoll Integrated Development Project, Republic of the Maldives (Colombo).
23. Ibid. 1982. "IHAP :30 years of Service: 1952-1982" (N.Y.: brochure).
24. Ibid. May 1984. Operational Program Grant (OPG) Extension Proposal: Raa Atoll Integrated Development Project.

25. Ibid. Dec. 1984. Proposal for Operational Program Grant: Paaf-Dhaal Integrated Atoll Development Project (Ugoofaaru/N.Y.).
26. Maloney, Clarence. 1980. People of the Maldive Islands (Bombay: Orient Longman).
27. Ministry of Health and World Health Organization. Feb-Mar. 1980. One Way To Health For All: The Country Health Programme of the Maldives. Vol 1 (Malé: Ministry of Health).
28. Ministry of Health. Dec. 1982. Preliminary Report of the 1982 Health Survey (Malé).
29. Munch-Petersen. n.d. (1979?). Report to UNICF on the Maldives (unpublished report).
30. National Planning Agency. February 1980. Report on the Survey of Island Women, 1979 (Male: National Planning Agency).
31. Raa Hospital Admission Register.
32. Rashaad, Ibrahim and Salah Shihab, Mohamed Shihab, Deepa Narayan-Parker, Gnani Thenabadu. September 1983. Mid-Term Tripartite Evaluation of Raa Atoll Integrated Development Project, Maldives (Male).
33. Sweet, Charles F. Sept. 1983. Designing Development Projects that Benefit the Rural Poor, Final Draft (Prepared by Development Alternatives for FAO, Rome).
34. World Bank. 1980. The Maldives: An Introductory Economic Report (Washington, D.C.: The World Bank).

Appendix 1.B: Population and Land Area for Islands in Raa Atoll

Name of Island	Population		Surface Km ² (a)	
	1982 ^(a)	1985 ^(b)		
Alifushi	1245	1374	0.70	
Vaadhoo	241	269	0.64	
Rasagatheem	559	604	0.37	
Angolitheem	238	252	1.04	
Gaaundudu	330	364	0.13	
Ugulu	372	394	0.13	
Ugoofaaru	626	711	0.42	
Kandholhudhoo	1826	1974	0.05	
Maakurathu	559	606	0.65	
Rasmaadhoo	538	583	0.25	
Innamaadhoo	367	422	0.20	
Maduwari	993	1099	0.18	
Iguraidhoo	834	941	0.62	
Fainu	188	200	0.65	
Meedhoo	968	1060	0.38	
Kinolhas	274	291	0.68	
TOTAL	10,158	11,144	7.09	

(Source: (a) Baseline Survey Report, as at March 1982, p.8.

(b) Island Office figures submitted February 1985.)

Appendix 2 A

IHAP Maldives
End of Project Evaluation
Scope of Work

A. Project Background Data

1. Project Title: IHAP Raa Atoll Integrated Development OPG
2. Project No: 498-0251
3. Obligating Document: Grant Agreement No.ASB-0251-G-SS-1056-00
between A.I.D. and the International Human Assistance Programs
4. Purpose of Grant: The purpose of this grant is to provide support to the International Human Assistance Programs, Inc. (IHAP) for a two and one-half year program for the RAA Atoll Integrated Development Project in the Republic of Maldives.
5. Project Duration: September 23, 1981 - February 9, 1985
6. Grant Funding:

9/23/81	-	\$ 179,000
3/ /83	-	\$ 374,000
8/ /84	-	\$ <u>100,000</u>
Total		\$ 653,000

B. Project Background

1. Project Objectives:

To supplement the development efforts of the Government (of Maldives) and UN agencies to improve the income, health and nutritional levels for the inhabitants of an entire Atoll.

2. Implementation of the Project:

In order to achieve the specific project objectives stated above the Grantee proposed to carry out the following activities under the grant:

1. Construct and equip a 12-bed regional hospital which will provide for more adequate medical treatment available to the people of a three atoll area. This

hospital would also serve as a center for referral from the system of community and family health workers as well as a screening center for referrals of the most serious cases to the central hospital in Malé.

2. Construction of rainwater catchments and community latrines to reduce the extremely high infant mortality rates which are primarily caused by water borne diseases. This would be augmented by a program of intestinal parasite eradication.

3. Implementation of a rat control program which would benefit both the agricultural sector in reduction of coconut and crop losses as well as reducing the incidence of rodent-bourne diseases.

4. A reforestation project which has the objective of providing seedlings for desperately needed firewood timber and coconut replanting.

5. Income generation which will be designed to

- (1) increase disposable income available to individuals and
- (2) to create an atoll-wide organization that can help organize income producing activities after the duration of IHAP's initial input.

C. The Evaluation

1. Evaluation Methodology:

Contractor will serve independently as a member of a three person evaluation team which will include a representative of the Government of Maldives, and a consultant contracted by IHAP. The evaluation will begin o/a January 16 and will extend through February 13, 1985. The time for the evaluation will provide approximately two weeks for travel to and from Maldives and within the Raa Atoll to conduct the evaluation and approximately one week for preparation of the draft evaluation report in Male.

Note: The contractor will be allowed up to three days following his/her return to Colombo for the purpose of finalizing a written report of the findings and conclusions of the evaluation and for providing an oral debriefing of the evaluation to USAID officials.

2. Evaluation Purpose:

The purpose of the end-of-project evaluation is to determine:

1) The extent to which the project objectives have been achieved, i.e. the extent to which the income, health and nutritional levels of the inhabitants of Raa Atoll have been improved as a result of the project,

2) The extent to which each of the implementation activities listed above have been carried out

3) The relative importance each of the project activities had in contributing to the achievement of the project objective.

4) The extent to which there have been unforeseen beneficial outputs as a result of the project and the extent to which they have contributed to the achievement to the project objective.

Note: The project objective as stated above is taken from the program description contained in the grant agreement of September 17, 1981. However, other project documents describe an additional objective of the project, namely, the upgrading of local organizations, so that they will be able to initiate and implement

Community Development activities upon completion of the project. This concept of "community-based development" is an important element in IHAP's implementation of the project.

Therefore, the contractor will also evaluate the extent to which the concept of "community-based" development has been understood and followed in the implementation of the project and the prospects for a continuation by the islanders of this approach to future development problems after the departure of the IHAP project managers.

3. Evaluation Guidelines:

The contractor's conclusions should be supported by verifiable data and/or personal observation to the maximum extent possible. Where verifiable data is not available the contractor should so state and indicate whatever other basis was used in reaching his/her judgment regarding project achievement and impact.

The report of the evaluation should answer the following major questions:

- 1) Was the basic design for implementation of the project adequate?
- 2) Were the basic goals and objectives of the project sufficiently clear & specific enough so as to contribute to a common understanding by
- 3) Was management of the project adequate? / standing by IHAP & GORM?
- 4) Was sufficient time allowed for achieving the project objectives including the successful transfer of the concept of "Community Based Integrated Rural Development?"
- 5) Were project activities adequately designed so as to assure achievement of the project objectives?
- 6) Were other anticipated project inputs from AID, the GORM, and IHAP provided to the project as anticipated?
- 7) Who were the direct and indirect beneficiaries under each of the activities?

8) How effective has the loan program been as a means of generating local income? Is the purpose of the loan activity clearly stated and understood by the islanders and GORM officials? Is the design and implementation of the loan program adequate to achieve its purpose?

9) What impact did the recommendations of the mid-term evaluation have on project design and implementation of the project?

10) How effective has the PVO been in meeting the reporting requirements. If USAID/GORM recommendations were made with respect to project activities, how effective has the PVO been in carrying out the recommendations and reporting progress?

D. Reports

1. General - The consultant is expected to participate in the preparation of a draft evaluation report of the project which will include a list of written materials reviewed, persons interviewed regarding the evaluation, project activities observed, a narrative report of pertinent observations regarding the status of project implementation including both project accomplishments and project problems; conclusions reached with regard to the project and the data and/or reasons in support of the conclusions.

Following travel in Raa Atoll the consultant will work with other evaluation team members in Malé for approximately one week in drafting the report. Conclusions contained in the report should represent the consensus of the team. To the extent the conclusions do not represent a consensus, differences should be reported along with the reasons that different conclusions were reached.

In addition to participating in the draft evaluation report, the contractor is required to submit his/her own evaluation report in final within 3 days of his/her return to Colombo from Maldives.

2. Format of the report

The report will contain the following sections:

- Executive Summary (two pages, single spaced, including statement of purpose of the AID project(s) reviewed and of the evaluation);

- Statement of major findings or conclusions (short and succinct with topic identified by subhead) and recommendations (corresponding to major findings and worded, whenever possible, to specify who, or which agency, should take the recommended action);
- Body of report which provides the information on which the findings and recommendations were based); and
- Appendices as necessary (including, minimally, the evaluation's scope of work and a description of the methodology used and, possibly, methodological recommendations for future evaluations).

OUTLINE FOR EVALUATION OF PVO FIELD SUPPORT GRANTS

Activity Title:

Grant Number:

Activity Location:

PVO Name:

Contact Person:

Period Covered by Evaluation:

Name(s) and Title(s) of Evaluator(s):

Type of Evaluation: Interim Final

The following paragraphs are keyed to the basic outline of the Guidelines for Preparation of Proposals for PVO Field Support Grants. The evaluation should be prepared by using the original PVO proposal and signed grant plus any amendments made since the inception of the grant. The topics herein relate directly to those outlined in the original proposal.

Evaluation Summary: This brief section should summarize the evaluation, findings and include the particular major conclusions, lessons learned and changes needed.

- A. Activity Purpose and Description: The evaluator should examine the activity purpose and description to determine if there has been any significant change in the purpose or description as originally outlined in the grant and proposal. If no change had occurred simply state so. If there have been changes, describe their nature and extent.
- B. What has been done to date? The original proposal describes work done to date prior to the inception of this grant. In the evaluation summarize what has taken place since the grant began.
- C. Describe the Beneficiaries: (1) They should be described as outlined in Section C of the Guidelines for Preparation of Proposals. (2) How have your original

projections regarding the cost per beneficiary and the degree to which they will benefit varied at this point? If the cost and degree of benefit are significantly higher or lower than originally projected, what changes should be made in the activity?

What has this activity accomplished?

(1) This section should provide the data gathered to date as outlined in the original proposal. It should list the indicators of progress described in the proposal showing the change in the indicative information gathered at the beginning of the activity, at any interim points in between and the current available indicators. It should also describe as specifically as possible any other changes not originally anticipated which have taken place. The PVO should examine the results of this material to determine whether or not the indicators have been sufficient to measure progress. If not, additional or different indicators should be proposed in this section.

(2) This section should also discuss whether or not the changes anticipated at the beginning of the activity are realistic based on the evaluation and whether it appears the activity will exceed or fall short of its original goals. It should also examine what prospects there are for activities to continue at the end of the project and whether or not the PVO's original projections on continuation are still valid.

How the Activity is being Implemented. The evaluator should examine the methodology which has been used to date to determine whether or not it is adequate or whether changes should be instituted in order to improve the operation of the activity.

Time Frames. Is this activity on schedule as outlined in the original proposal? Is it ahead of schedule? Is it behind schedule? Should the schedule be adjusted at this point? Is there a need to extend the activity time limit?

Assumptions. Reexamine the assumptions in the activity proposal to determine if the list of assumptions is still valid. Have any assumptions failed to materialize which affect the project negatively? Are there additional assumptions which should be added at this point in time?

- H. Describe any changes in your evaluation plans. Based on this current evaluation, assuming it is an interim evaluation, what changes or approaches will you adopt in the next evaluation in order to improve the content of that evaluation. If no changes are anticipated from the original proposal or in subsequent evaluations, simply say so.
- I. Budget Financial Narrative: Whether this is an interim or a final evaluation, this section should compare the actual expenditures of AID and other resources with the original projections of expenditures shown in the proposal. There should be a breakdown using the same line items as included in the original proposal, with two columns for the AID expenditures, one showing the original projections and the second showing the actual expenditures at the time of the evaluation. The same two column approach should be used for non-AID expenditures. For an example, see the budget page in Attachment F, Illustrative PVO Evaluation. Based on the variance between proposed and actual expenditures, what comments, if any, do you have regarding changes or adjustments to the budget in future years? Are there projected sub-activities which have failed to materialize for which the funds set aside will no longer be needed? Are there sub-activities which are costing more than originally programmed or which, with an additional infusion of funds, could improve the end performance of the activity? Have your original plans for sub-grants or contracts with other organizations changed?

PROPOSING CHANGES TO THE GRANT

If this evaluation has revealed substantive changes or deviations from any of the components in the original proposal, do you feel that the activity should be amended to adjust for these changes? If you do, in a separate letter referring to the proposal as originally approved and subsequently amended, suggested changes or substitutions of wording or funding which you feel would improve the project. This should be in the form of a request to the AID mission for consideration of the changes. The submission should provide the precise proposed revisions to the original proposal. If the grant is expiring in the coming year and you wish to request an extension, with or without additional funding, this presentation should be made providing budget proposals, if required, for additional years. Narrative materials for other sections of the original proposal should also be included, which will explain what additional activities will be undertaken.

Appendix 2. C: List of People Interviewed

OFFICIALS AND OTHERS INVOLVED IN PROJECT POLICY AND MANAGEMENT
(IN ALPHABETICAL ORDER BY LAST NAME).

1. Aneesa Ahmed - National Women's Committee.
2. Abdul Azeez - Senior Under Secretary, Ministry of Agriculture.
3. Peter Buijs - IHAP Project Manager
4. Tutu Didi - Director, Allied Health Services Training Centre.
5. Hussain Hameed - Vice Chairman, Ministry of Atolls Administration.
6. Delwar Hussain - Assistant General Manager, Bank of Maldives.
7. Gasim Kaleyfan - Raa Atoll Chief.
8. Bonnie Kittle - IHAP Project Manager
9. Abdul Majid Mahir - Director, Maldives Water and Sanitation Authority.
10. Ibrahim Rashaad - Project Director, Ministry of Atolls Administration.
11. Dr. A. Razoo - Resident Physician, Raa Atoll Hospital.
12. Husna Razee - Under Secretary, Ministry of Health.
13. Mohamed Shariff - Director of External Relations, Ministry of Foreign Affairs.
14. Mohamed Shihab - Senior Under Secretary, Ministry of Planning and Development.
15. Per Wam - Resident Representative, Redd Barna, Maldives.

INTERVIEWS HELD IN EACH MAJOR PROJECT AREA BY TYPE OF INTERVIEWEE*

<u>Health</u>	<u>No</u>
Foolhumas	8
MAT builders	3
Water Tank Builders	6
PIWs	16
CHWs	2 (one former)
Hakeems	2
Pharmacist	1
Pharmacy Manager	1

Health (Cont'd)

Spirit doctor (Fanditha practitioner)	2
Gutter makers	2
Recipients of Gardening training	1
Recipients of Rat Control training	1
Mothers with Child	6
Manager of Island Club	1
Members of Women's Group	3
Island Office Staff	1
Islanders	2
Fisherman	1
PHW partially trained by IHAP	2

Agriculture

Katheeb	9
Kuda Katheeb	7
Other Island Committee Members	18

Education

Teachers	19
Katheeb	9
Kuda Katheeb	7
Other Officials	5
Islanders	18

Income Generation

"Rich" Islanders	15
"Middle" Islanders	15
"Poor" Islanders	10
Loan Applicants	10
Full Time Loan Officer	1
Part Time Loan Officer	2

CBIRD

Island Development Committees	13
Island Women's Development Committees	9
Islander -	
Couples	19
Women on the Own	15
Men on their Own	12

- * Some individuals were interviewed regarding more than one activity and are counted more than once.

Appendix 3.A: Growth Monitoring Results, Raa Atoll

	Sept.	Oct.	Nov.	Dec.	
Registered	22	23	21	23	Angolitheem
Weighed	22	20	26	19	
Ratio ($\frac{\text{weighed}}{\text{registered}}$)	100%	95.2%	95.2%	82.6%	
Underweight	2	2	1	2	
Ratio ($\frac{\text{underweight}}{\text{no. weighed}}$)	9%	9.5%	5%	10.5%	
Registered	21	23	24	24	Kinolhas
Weighed	20	23	22	23	
Ratio ($\frac{\text{weighed}}{\text{registered}}$)	95.2%	100%	91.6%	95.8%	
Underweight	1	1	1	3	
Ratio ($\frac{\text{underweight}}{\text{no. weighed}}$)	5%	4.3%	4.5%	13%	
Registered	66	73	74	79	Ugoofaaru
Weighed	29	52	50	40	
Ratio ($\frac{\text{weighed}}{\text{registered}}$)	43.9%	71.2%	67.5%	50.6%	
Underweight	8	8	8	7	
Ratio ($\frac{\text{underweight}}{\text{no. weighed}}$)	27.5%	15.3%	4.5%	17.5%	

NOTE: No other months were used due to lack of sufficient successive monthly data. (FIWs did not report.)

(source: IHAP/Raa: Growth Monitoring Results Sep-Dec 1984)

**Appendix 3.B: Status of Health Sector Targets
In The Raa Atoll CBIRD Project**

<u>Target</u>	<u>Met</u>	<u>Unmet</u>
Monthly growth monitoring on 14 islands ¹	✓	
Water tank construction skills transfered to 4 people/island ²		✓
Latrine construction skills transfered to 4 people/island ³		✓
14 Family health workers providing health education ⁴	✓	
10 Trained foolhumas ⁵		✓
12 Bed hospital with:	✓	
Preventive clinic for routine exams		✓
A laboratory (for blood HG, WBC, TCDC, urine, etc...)	✓	
Curative services	✓	
1 Community health supervisor		✓
Periodic refresher training for FIW's	✓	
A referral system for all atoll islands		✓
Lab technician(s) in hospital	✓	
1 Person/island trained in latrine cleaning & functioning ⁶		✓
1 Person/island trained in water tank cleaning & functioning ⁷		✓
60 Rainwater catchments ⁸		✓
15 Community latrines		N/A
Intestinal parasite eradication program		✓
450 Ash latrines		✓
A supplemental training program for FIW's		✓
Vegetable garden project for 15 women (for nutrition)		✓
Mothers trained in nutrition & health for their children		✓
Safe drinking water from tanks for 50% of atoll (600m) ¹⁰		✓
Human waste disposal system for 25% of population ¹¹		✓
10 Gardens		✓
1 FIW per island ¹²		✓

(source: evaluation team)

1. The quality, quantity & regularity varies significantly from island to island & month to month (not always improving, see Appendix 3.A).
2. Not every island participated in a tank building program, but even among those that did, neither transfer from IHAP to islander nor islander to islander has reached 4/islands.
3. The comment in footnote 2 above applies to MATs as well.
4. Common skill/information level unacceptable, though.
5. A decision to train only 4/session will push the completion of this target to appx. 5/85.; 6. See footnote 3.;
7. See footnote 2.; 8. 24 only in operation.; 9. 39 only in operation.; 10. 390m³ have been constructed, but only 240m³ are operational. (17.9% of atoll).; 11. 2.3% only.
12. The 1 island w/o a FIW proposed one, but she was rejected as too young. No replacement was proposed.

Appendix 3.C: Family Health Worker Survey, Selected Results

Age 25 years (median)
23 years (mean)

Sex 6 men
10 women

Number of months as FHW 39 mean
41 median

Satisfaction with salary 12.5% satisfied
50.0% want more money
37.5% did not know

Mean suggested salary increase Rf.117
(present salary per month: Rf.190)

Normal problems encountered

Asthma	12.5%
Stomach Ache	6.3%
Headaches	6.3%
Diarrhoea	50.0%
Burns	12.5%
Worms	25.0%
Colds	43.8%
Temperature	31.3%
Pain	18.8%
Cough	25.0%

Knowledge of well chlorination	87.5% yes
	12.5% no

Have own garden	6.3% yes
	93.7% no

(source: evaluation team survey of all Raa Atoll FHW's,
Jan-Feb 1985)

Appendix 4.: THERE IS NO APPENDIX 4.

Appendix 5.A: Education Fact Sheet (status on Feb 1985, beginning of school year)

<u>Island Name</u>	<u>Pop.</u>	<u>Old Infrastructure</u>		<u>New Infrastructure</u>			<u>TT^a ITE</u>	<u>School Children</u>	
		<u>sq.ft.</u>	<u>materials</u>	<u>sq.ft.</u>	<u>status</u>	<u>furniture</u>		<u>6-15 years</u>	<u>enrolled (avg age)</u>
Veedhoo	269	300	cadjen	1,440	in use	completed	1	85	77
Reegothoo	604	1,000	cadjen	1,440	in use	completed	1	130	140
Angolitheo	252	160	office ver.	960	in use	completed	1	60	51
Geoundoohoo	364	225	office ver.	960	in use	completed	1	89	89
Ugulu	394	368	old store	1,440	in use	3/4 compl.	1	74	64
Ugoofaaru	711	756	old store	1,440	in use	1/4 compl.	2	160	128
Maekurathu ^c	606	500	old bldg.	1,440	c. halted	-	1	133	136
Raamaadhoo	583	525	old bldg.	1,440	in use	started	ITE	173	158
Innaamaadhoo	422	300	old store	960	in use	3/4 compl.	ITE	70	106
Igureidhoo ^d	941	600	cadjen (2)	1,800	in use	completed		248	168
Fainu	200	300	cadjen	960	in use	3/4 compl.	1	61	70
Kinolhee ^e	291	400	old store	960	started	to be st.	(1)	76	85
Subtotal	5,637	5,434		15,240			9/2	1,357	1,272
									all-ages

- a. Trained Teacher.
- b. In Training Teacher.
- c. Construction in Maekurathu is halted as the public is awaiting permission to demolish the nearby former Mosque.
- d. Furniture constructed by Club for two classes; public to supply furniture for other two classes. Teacher trainee dropped out of ITE as results not satisfactory.
- e. Kinolhee school is to be started on Feb. 8, 1985 (funded by GRM + INAP, all work to be done by public). TT presently assigned to Kandholhudhoo.
- f. Classroom space: In addition to this there are an office and store room of 110 sq. ft. each.

Children age 6-15 enrolled: 895 (1,205)

Direct beneficiaries:

- 1,272 Children (plus 177 children in Maduvari - furniture under construction).
- 9 trained teachers.
- a substantial number of untrained teachers (part-time; island office staff and others).

Indirect beneficiaries:

- 5,637 inhabitants who have access to the school building for other purposes (celebrations, meetings, adult education etc.).

Other schools in the:

Atoll Primary School in Kandholhudhoo and Atoll Education Centre in Maadhoo, construction was funded by Japan and UNICEF respectively. Enrolled, 517; TT, 8.

A school has been started in Ailifushi (UNICEF upgrading program) and GRM has promised a new school for Maduvari (upon completion of Mosque), so all islands will have new facilities for education shortly.

(source: Project Manager)

Appendix 5.B: IHAP - Original Adult Education In Raa Atoll

<u>Courses</u>	<u>Days Per Course</u>	<u>No. of Participants</u>
1. BDC Refresher	4	4
2. Rat Control 1	4	12
3. Island Leeseo	3	22
4. PHW Intro.G.M.	3	12
5. Gardening	5	14
6. MAToilet	3	8
7. T & Prin.Sem.	3	15
8. PHW Growth Mon.	6	9
9. Rat Control 2	4	24
10. WaterTank Const.	9	16
11. PHW Growth Mon.	6	7
12. BDC Refresher	6	7
13. PHW HED & Nutri.	7	5
14. PHW Hed & Nutri.	7	8
15. Bat Control	1	18
16. Teacher Workshop	4	19
17. PHW Water & Sani.	8	7
18. Poolhuma	30	4
19. Tank Maint/Op.	1	12
20. PHW Pre-natal	5	7
21. Loan Officer	60	3
22. Guttermaking (n-the-job)	20	10
TOTAL		243

People Trained Outside Raa with IHAP Assistance:

- IHAP paid half the pocket money for two atoll residents to attend the teacher training course in Malé. The students paid the other half.
 - IHAP paid for two girls from Ugoofaaru to attend an eight month vocational training course (fiber work) in Malé Atoll.
- (source: Project Manager).

Appendix 6.A: Loan Agreement



INTERNATIONAL HUMAN ASSISTANCE PROGRAMS INC.
SAA ATOLL INTEGRATED DEVELOPMENT PROJECT

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Page 1 of 2

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A. LETTER OF AGREEMENT

In accordance with section 1.3 Income Generation of the Saa Atoll Integrated Development Project, the Bank of Maldives Ltd., the Ministry of Atolls Administration and International Human Assistance Programs Inc. jointly agree to implement the Saa Atoll Loan Program as described in Annex 1(attached). This agreement specifically refers to the management responsibilities which will be assumed by each party as defined in Annex 1.

The Bank of Maldives Ltd., the Ministry of Atolls Administration and International Human Assistance Programs Inc. do hereby declare that these program responsibilities will be fulfilled in a spirit of honest and friendly cooperation and to the best of each party's abilities.

In witness thereof, the undersigned, being duly authorized, have signed this letter of agreement.

Signature

Witness

[Signature]
Bank of Maldives Ltd.

[Signature]
Ministry of Atolls Administration

[Signature] [Signature]
International Human Assistance Programs Inc.

Date

June 9, 1984



INTERNATIONAL HUMAN ASSISTANCE PROGRAMS INC.
SAA ATOLL INTEGRATED DEVELOPMENT PROJECT

FORM 1000
REVISED 1-1-1974
Printed in the U.S.A.

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SAA ATOLL LOAN PROGRAM - (SAA 27)

0. Table of contents

- 1 - Background
- 2 - Purpose
- 3 - Brief Description of the loan Program Activity
- 4 - Capital
- 5 - Accounting
- 6 - Terms and conditions for loans
- 7 - Documentation of loans
- 8 - Management Personnel
- 9 - Appendix

1. Background

The Saa Atoll Loan Program is an activity of the Saa Atoll Integrated Development Project. The goal of the project is to improve the quality of life of the inhabitants of Saa Atoll through activities in health, education, agriculture, human resource development and income generation. The project is made possible through a grant from the U.S. Agency for International Development and contributions from IHAP and the Government of the Republic of Maldives. The loan program activity was designed and will be implemented by the Bank of Maldives Ltd., the Ministry of Atolls Administration and IHAP.

2. Purpose

The purpose of the Saa Atoll Loan Program is to make credit available to worthy atoll residents who would normally not have access to credit for income generation activities. As such the loan program will contribute to the broader goal of increasing the disposable income of the Saa Atoll population.

3. Brief Description of the loan Program Activity

Loans for income generating, employment creating, production increasing and expense reducing activities will be made available to individuals and properly registered groups residing in Saa Atoll as per the terms and conditions stated in article 6 of this annex. Interested parties will complete a loan application form (ref art 7) and submit it to one of the three loan officers employed for the program (ref art. 8). The three loan officers, together, will review all applications, investigate technical and economic feasibility, consider and appraise collateral offered, equity, the position of the borrower and the repayment schedule, and submit the loan application form with appraisal reports to the Male' based Atoll Loan Committee (ref art. 8). The Atoll Loan Committee will review all loan applications presented by the loan officers within 30 days and make the final decision regarding approval of the loan application, repayment schedule and any special provisions required. Upon approval of an application by the Atoll Loan Committee the Bank of Maldives will prepare the required documents (ref art. 7) for signature by the applicant and registration in the Male' courts. Upon satisfactory completion of the above mentioned procedure the Bank of Maldives will disburse credit to the borrower from the Saa Atoll Loan Account (ref art 4 & 5), whenever possible in the form of cash or checks or otherwise cash for the procurement of commodities.



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The borrower will be responsible for repaying the loan according to the schedule established by the Atoll Loan Committee. The loan will be repaid directly into the Saa Atoll Revolving Loan Fund account. In case of default the Bank of Maldives will proceed in the Maldivian courts, effect repossession of the collateral to satisfy any outstanding balances and charges or reschedule loan repayments due or renegotiate the terms of the loan if extenuating circumstances can be said to exist. (for definition of default see art. 6, 2)

It is understood that the Saa Atoll Loan Program Activity will continue to operate according to the principles laid down in this agreement, for an indefinite period, far beyond the duration of the Saa Atoll Integrated Development Project. IHAP's responsibilities for the program will be assumed by the Bank of Maldives and the Ministry of Atolls Administration as determined in art. 8 upon completion of the Saa Atoll Integrated Development Project.

4. Details

- a. Initial capital for the Saa Atoll Loan Program will be made available by IHAP up to a total of US \$ 51,000 (Fifty-one thousand US dollars).
- b. Funds for the disbursement of approved loans will be deposited by IHAP into an account named the Saa Atoll Revolving Loan Fund at the Bank of Maldives (ref art. 5) for the amount of loan requests approved by the Atoll Loan Committee within 75 days of the loan application review meeting.
- c. Upon registration in the Maldivian courts of the loan agreement, funds will be disbursed from the Saa Atoll Revolving Loan Fund to the borrower, either in the form of crossed checks or cash (for operational procedures of the account ref art 5).
- d. No funds will be disbursed by IHAP for loans approved after Jan. 27, '85 unless otherwise agreed upon by IHAP and the Ministry of Atolls Administration in writing.
- e. All loan repayments will be deposited by the borrowers into the Saa Atoll Revolving Loan Fund.
- f. After Jan. 27, '85 loans will be made available under the terms and conditions as described in art 6 from the balance in the Saa Atoll Revolving Loan Fund.
- g. Up until Jan. 27, '85 IHAP will disburse funds for administrative supplies forms etc. needed for the program as well as funds for the salaries of the three loan officers employed for the program. (see also ref art 5 i).
- h. Unless otherwise agreed upon in writing by IHAP and the Ministry of Atolls Administration, all expenses of the loan program activity will be borne by the income earned by the Saa Atoll Revolving Loan Fund (ref art 5)
- i. If for some reason the Bank of Maldives ceases to exist, all remaining funds in the Saa Atoll Revolving Loan Fund and outstanding payments are to be used by the Government of the Republic of Maldives for public development activities in Saa Atoll.
- j. If due to a ruling by the courts a loan cannot be fully recovered, the loss will be absorbed by the Saa Atoll Revolving Loan Fund.

5. Accounting

- a. An account named Saa Atoll Revolving Loan Fund will be established at the Bank of Maldives, Maldivian. Upon approval of the loan applications by the Atoll Loan Committee IHAP will deposit funds into this account for the total amount of approved loan requests. All borrowers will repay their loans directly into this account as well.



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- b. This account will be a regular savings-checking account and the Bank of Maldives will pay interest on the balance according to prevailing rates. The interest earned by this way becomes an integral part of the Saa Atoll loan fund capital and will be lent accordingly.
 - c. The Bank of Maldives will act as trustee for the account (for fee ref. art 5, I)
 - d. Checks drawn on the account will be signed by two members of the Atoll Loan Committee, one of whom will be either from IHAP or the Ministry of Atolls Administration. All five Atoll Loan Committee members will file signatures for the account at the Bank of Maldives.
 - e. All approved loans will be numbered from 01 up and for each loan separate records will be kept in the Saa Atoll Revolving Loan Fund Ledger.
 - f. Deposits by IHAP and borrowers will be entered into the Saa Atoll Revolving Loan Fund ledger on the date the funds are deposited.
 - g. The Bank of Maldives will provide an account statement to the Atoll Loan Committee once every 12 months, from 1 - 15 days before the scheduled 12 - monthly loan application review meeting.
 - h. The income of the Saa Atoll Revolving Loan Fund Account is defined as the interest and charges collected on outstanding loans.
 - i. The direct expenses payable directly by the Saa Atoll Revolving Loan Fund consist of the costs of passports, forms, ledgers, loan officers' wages and per diem and loan program related transportation expenses and legal charges. The Bank of Maldives will maintain separate records of these expenses, which are to be paid after Jan. 31, '85 from the income, as defined under 5h.
 - j. The Bank of Maldives will present a statement of income and expenses annually which will be examined and certified by the Government Audit Office.
 - k. The annual profit of the Saa Atoll Revolving Loan Fund is defined as the income under 5h minus the expenses under 5i.
 - l. Fifty percent of the annual profit of the Saa Atoll Revolving Loan Fund will revert to the fund itself as capital gains to be lent accordingly while the remaining 50% will revert to the Bank of Maldives to cover indirect operating costs of the Bank.
- 6. Terms and Conditions for loans.**
- a. Only Maldivian Nationals permanently residing in Saa Atoll are eligible for loans, for economic activities carried out exclusively in Saa Atoll (the one exception being the three loan officers who are not eligible for loans by virtue of their position of loan approval).
 - b. The maximum loan amount is Mf. 35,000 to any one borrower or group of borrowers.
 - c. Thirty percent of the capital of the Saa Atoll Revolving Loan Fund will be reserved for loans not to exceed Mf. 5,000 to any one borrower or group of borrowers.
 - d. The borrower must provide at least 25% of the total investment either in cash or in kind.
 - e. The maximum repayment period is three years from the time of disbursement of the funds to the borrower.
 - f. The maximum deferral period for the first payment is one year.
 - g. The interest rate will be determined once every six months by the Atoll Loan Committee. The interest rate will be either three percentage points below the Bank of Maldives commercial lending rate, or 12% per annum, whichever is lower.
- Collateral valued at twice the loan request must be given to secure a loan.
1. If the applicant him/herself cannot comply with the requirement under



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On a third party guarantee is acceptable.

- j. The borrower will be responsible for repaying the loan according to the schedule established by the Atoll Loan Committee, with payment due every two to six months depending on the nature of the activity financed by the loan.
 - k. If the borrower misses a payment the bank will notify the full time loan officer who will visit the borrower and warn him/her of the consequences of missed payment default (ref 6 I)
 - l. If the borrower misses two consecutive payments, the three loan officers will visit the borrower to investigate the problem. The loan officers will then advise the Atoll Loan Committee to either:
 - i- press charges and repossess the loaned items/funds
 - ii- press charges and posess and liquidate the collateral
 - iii- if honest and extenuating circumstances can be said to exist, to renegotiate the loan payments or renegotiate the terms and conditions.
- All recommendations must be accompanied by a full written explanation

7. Presentation of loans

- a. Every eligible party interested in being considered for a loan is required to complete a loan application form (1)
- b. If necessary the loan officers can provide assistance in filling out the form.
- c. The three loan officers will scrutinize all applications, investigate the accuracy and completeness of the information, make on-site inspections and prepare an annual report (2) which will be submitted along with the loan application form by the full time loan officer to the Atoll Loan Committee, once every two months.
- d. If the Committee approves a loan application it will complete a letter of sanction form (3), which will be returned to the applicant by the full time loan officer for his/her signature. If a loan application is rejected, written explanations will be forwarded to the applicant by the full time loan officer.
- e. The bank of Maldives will then prepare a loan agreement (4) which will be registered in the Malé courts, and if required, a letter of guarantee (5) to be signed by the guarantor.
- f. Finally the borrower will sign a signed promissory note (6) and receive a San Atoll Revolving Loan Fund Special chek book (7) and Passbook (8) both of which will carry the San Atoll Revolving Loan Fund account number and loan number suffix.
- g. Each transaction will be entered into the borrowers passbook when he presents it to the bank teller, hence the borrower will always know his outstanding balance. Likewise transactions will be recorded in the account ledger as per art. 5f.

8. Management & Personnel

- a. The management of the San Atoll Revolving Loan Fund and final decision making regarding the loans rests with the Atoll Loan Committee which consists of the following parties:
 - one representative of the Board of the Bank of Maldives
 - one representative of the Bank of Maldives' managerial staff
 - one representative of the Ministry of Atolls Administration
 - the full time loan officer employed by the San Atoll Loan Program (ref. 8 c)
 - one representative of IHAAP
- Each of the three participating organizations will appoint their representatives on the committee annually. The full time loan officer however will retain his position from year to year unless prevented by illness, death,



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- resignation or 75% of other four members of the Atoll Loan Committee decide to dismiss him/her due to proven incompetence or fraud.
- b. **Res Atoll Loan Committee meetings** should be scheduled at least ten days in advance so its members can prepare for the meeting. A loan can be approved and a decision taken if at least three members of the committee vote in favour.
- c. The day to day financial and administrative management of the Res Atoll Loan Program will be carried out by the Bank of Maldives and the full time loan officer.
- d. The full time loan officer will be assisted by two part-time loan officers in the bi-monthly review of loan applications and preparation of the appraisal reports.
- e. These three loan officers should be Res Atoll residents, recruited by IHAP, trained by both IHAP and the Bank of Maldives and employed by the Res Atoll Loan Program as represented by the Atoll Loan Committee.
- f. Upon completion of their training the loan officers will initially be assisted and supervised by IHAP. Upon completion of the Res Atoll Integrated Development Project, this task will be assumed by the Bank of Maldives.
- g. Upon completion of the Res Atoll Integrated Development Project, IHAP's place on the Atoll Loan Committee will be taken by a person chosen by the Res Atoll Development Committee.
- h. The Bank of Maldives as trustee for the Res Atoll Revolving Loan Fund and co-implementing organization will maintain the Res Atoll Revolving Loan Fund account, separate records for the direct expenses incurred by the Res Atoll Loan Program. The Bank will provide copies of the account statement to all Atoll Loan Committee members once every two months and prepare an annual statement of income and expenditures. The Bank will prepare the required documentation 1-6 as described under art. 7 of this agreement and the Bank will provide a list of defaulters to the Atoll Loan Committee once every two months. In case of default as described under art. 6. i. the Bank will be responsible for pressing charges, repossessing loaned items, recovering and liquidating collateral.
9. **Amendments.**
Should it appear desirable, during the remaining period of the Res Atoll Integrated Development Project to adjust any of the guidelines and the procedures described in this agreement, this agreement may be amended, upon written agreement by all 3 signatory parties. Should the Bank of Maldives in the future expand its operations to the atolls by means of mobile banking or a Res Atoll branch establishment, then section under art. 8 Mangamth Personnel may be amended upon written agreement by the Bank of Maldives and the Ministry of Atoll Administration

- - 3 - -

FR/en May 1984.

NAA ATOLL LOAN PROGRAM

LOAN APPLICATION FORM

To apply for a loan through the Naa Atoll Loan Program you must complete this form in its entirety. If you have any questions or difficulties please do not hesitate to contact the full-time Loan Officer, Mohamed Hameed, Poyyammag, Nangethoom. He can provide you with assistance in filling out the form and give you advice on the business/activity you propose. When you have completed the form please submit it to him as well.

I. Program of loan and Background Information LOAN NR NAA/P.....

1- Name of Loan Applicant : _____

2- Age of Loan Applicant : _____

3- Island and House Name : _____

4- Main Occupation : _____

5- Other Occupations : _____

6- Present Income : _____

7- a. Describe the activity/business you intend to establish/expand with the loaned funds: _____

b. Describe the benefits that will accrue to you and other people as a result of the activity/business: _____

c. Describe the experience you have in the activity/business for which you are requesting a loan: _____

d. Amount of loan requested (from 17c) Nf _____

e. Private contribution (from 17 b) Nf _____

f. Repayment period requested : _____ months, of which requested as grace period _____ months.

9- Below give the names and ages of all people living in your house:

Name	Age	Name	Age
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

10- Circle below the types of property you own or lease and describe each according to type, size, number, age, condition, location, use etc. Where applicable provide registration numbers.

- a. house _____
- b. furniture _____
- c. boats/battles _____
- d. coconut trees _____
- e. uninhabited island/public trees _____
- f. poultry/animals _____
- g. WTCC shares _____
- h. tools/equipment _____
- i. miscellaneous _____

10- Have you ever borrowed money or obtained a material/equipment loan from a private individual or institute or the Government?

- a. Yes/No _____
- b. If Yes, for what purpose : _____

11- Do you presently have any outstanding debts ?

- a. with private people Yes/No Amount, Rf. _____
- b. with an institute/bank Yes/No Amount, Rf. _____
- c. with the Government Yes/No Amount, Rf. _____

II. Start up costs and source of funds

Under this heading you have to provide information about the construction, equipment, materials, labor and miscellaneous services you need in order to start or expand your activity/business. Some of the items you need you may already possess, while other items will have to be bought. Fill in the present value or cost of items that you will contribute yourself in the column "self". For the items or services for which you require funds from the New Start Loan Program obtain a proforma invoice from the supplier and fill in the cost in the column "loan". Attach the proforma invoice to this loan application form when you submit it. If you fill in this section of the form correctly, you will be able to figure the total start-up costs of your (expanded) activity/business, as well as the amount of loan you require.

12- Real Estate (buildings, workshops, shops, dhans or other work areas).

a. List real estate you presently have and intend to use for the activity/business:

<u>Description</u>	<u>Source</u>	<u>Amount (self)</u>	<u>Amount (loan)</u>
_____	_____	Rs _____	Rs 0
_____	_____	_____	0

b. List equipment, supplies and services you need for the construction/repairs of real estate needed for the activity:

<u>Description</u>	<u>Source</u>	<u>Amount (self)</u>	<u>Amount (loan)</u>
_____	_____	Rs _____	Rs _____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

c. Real estate, construction/repairs Total: Rs _____ Rs _____

13- Equipment (items that are used in conducting your activity/business but are not expended in the process).

a. List below all equipment needed to conduct your business, where you plan to obtain it and its value or cost.

<u>No</u>	<u>Description</u>	<u>Source</u>	<u>Amount (self)</u>	<u>Amount (loan)</u>
_____	_____	_____	Rs _____	Rs _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Equipment, Total Amount: Rs _____ Rs _____

14- Supplies (items that are used up/consumed in conducting your activity/business and therefore need to be replenished regularly).

a. List below the supplies that you need to start and run your activity/business before you can purchase them from the income you get from the activity/business. Tell the quantity needed, the place where it can be obtained and the value or cost.

Qty	Description	Source	Value	Cost	Amount (self)	Amount (loan)

b. Supplies, Total amount: Amount (self) Amount (loan)

15- Personnel (people that you employ to help run your activity whom you are giving a salary or allowance from your share of the income of the activity/business).

a. List the number of employees, occupation, salaries inclusive of allowance and the number of months you have to pay them before you can pay them from the income of the activity/business.

Qty	Description	Rate	Period	Amount (self)	Amount (loan)

b. Personnel, total amount: Amount (self) Amount (loan)

16- Miscellaneous

a. List any other miscellaneous expenditures you will incur to start your activity/business.

Description	Source	Amount (self)	Amount (loan)
Registration fees			
Taxes, duties			
Transport & freight			
Insurance			
Utilities			
Other			

b. Miscellaneous Costs, Total amount: Amount (self) Amount (loan)

III. COST - BENEFIT ANALYSIS

In order for your activity/business to be successful it is important that your monthly income from the activity exceeds the expenditures you incur for it. The purpose of this section of this form is therefore to calculate and compare your monthly expenditures and income. It is important not to forget any expenditures and to report only the income resulting from this activity/business. Questions 19, 20, 21 and 22 deal with various kinds of expenses while question 24 concerns your income from the activity/business.

19- Supplies

a. List the supplies from question 14 and fill in the quantity needed and associated costs per month:

Qty	Description	Rate	Monthly cost(US)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

b. Total monthly costs for supplies US

20- Personnel

a. List the personnel from question 15 and their monthly salaries inclusive of allowances:

Qty	Description	Rate	Monthly cost(US)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

b. Total monthly costs for personnel US

21- Miscellaneous

a. List the miscellaneous costs from question 16, the amount (in months) to which the costs apply and the average monthly cost:

Description	Cost per Month	% Allocation	Monthly cost(US)
Registration fees	_____	_____	_____
Taxes and duties	_____	_____	_____
Insurance	_____	_____	_____
Freight	_____	_____	_____
Utilities	_____	_____	_____
Other	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

b. Total monthly miscellaneous costs US

22- Monthly Loan Cost

Based on the amount of your loan request (17c), the repayment period and the deferral period (17f) and adding the service charge (currently 1% per annum or 1/12 per month) your monthly loan repayment can be figured. Ask the Loan officer to help you with this.

- a. Estimated outstanding balance at the end of the deferral period :
Rf _____
- b. Estimated monthly principal payments : Rf _____
- c. Estimated monthly interest repayment : Rf _____ (first month)
- d. Estimated monthly loan repayment (22b+c): Rf _____ (first month)

23- Total Monthly Cost

- a. Add up your answers from 19b, 20b, 21b and 22d to find your total monthly expenditures for your activity/business:

<u>Description</u>	<u>Monthly cost</u>
Supplies (from 19b)	Rf _____
Personnel (from 20b)	Rf _____
Miscellaneous (from 21b)	Rf _____
Loan repayment cost (from 22d)	Rf _____
b. Total monthly cost	Rf _____

24- Monthly Income

- a. List below the products or services you intend sell and the corresponding rates and income. If your business cycle is more or less than a month be sure to adjust your monthly income correctly.

<u>Qty</u>	<u>Description</u>	<u>Rate</u>	<u>Income (Rf)</u>	<u>Monthly Income(Rf)</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

- b. Total Monthly Income _____

25- Economic Feasibility

If you subtract the total monthly cost (23b) from the total monthly income (24b) you will find your monthly profit. If the cost are higher than the income your proposed activity/business is not profitable.

Appendix 6.B: Financial Analysis of Raa Atoll Loan Program

I. Expected Total Income on Capital

	<u>Rf.</u>
1. Initial Capital (by February 1985)	= 357,000 (\$ 51,000)
2. Estimated Capital use factor = 80% ^a	
3. Quantity of capital earning interest ^b	
a. 12% interest annum	= 285,600
b. 7% interest per annum (deposit account)	= 71,400
4. Total Annual Income on Capital:	
a. Loans to Raa Atoll Borrowers	= 34,272
b. RALP deposit account with BOM	= <u>4,998</u>
	Rf. 39,270

II. Expected Annual Expenses - Direct Operating Costs

	<u>Rf.</u>
1. <u>Salaries</u>	
a. Full-time Loan Officer	= 4,200
b. Part-time Loan Officers	= 1,440
2. <u>Travel</u>	
a. Full-time Loan Officer	
i. 6 return trips to Male p.a.	240
ii. Dhoni and crew rental (80 days/year)	2,800
iii. Per diem in Male (60 days)	420
b. Full-time and Part-time Loan Officers-Loan Review	1,400
3. <u>Miscellaneous Expenses</u>	1,000
4. <u>Printing Costs</u>	
Ledgers, pass books	5,000
	<u>16,500</u>

III. Income Net of Operating Costs

1. Annual Income on Loan Capital ^c	34,272
2. Direct Operating Costs	16,500
	<hr/>
<u>Net Income</u>	17,772

IV. Distribution of Net Income

1. BOM (50% of Net Loan Income)	8,886
2. Revolving Fund (50% of Net Loan Income + Income on Deposit Account)	13,884

V. Rates of Return

1. Total Rate of Return on Capital	6.4% p.a.
2. Annual Growth in Capital in Revolving Fund	3.9% p.a.

-
- a. Based on an average repayment period of 26 months and approximately 5 months between repayment and relending of funds, plus a "conservative" margin.
 - b. Capital not disbursed to Raa Atoll borrowers will earn 7% interest in a BOM deposit account. This income will all go into the revolving fund.
 - c. Excluding income on deposit account which goes directly into revolving fund.

Appendix 7.: THERE IS NO APPENDIX 7.

Appendix 8. Table A: RAIDP Overview Of OPG Budget And Expenditures (in US\$) per 27 Jan. 1985

Item	Budget '82	Budget '84		Expenditures	
	TOTAL	IHAP/NY	- IHAP/M	IHAP/M	NY
A. <u>Technical Assistance</u>					
1. <u>Personnel</u>					
a. U.S. Personnel	94,680	118,640	-	-	NY
b. Local Personnel	7,000	-	10,850	10,448.84	
Subtotal:	<u>101,680</u>	<u>118,640</u>	<u>10,850</u>	<u>10,448.84</u>	NY
2. <u>Travel & Transportation</u>					
a. International Travel	4,000	17,800	-	-	NY
b. Shipping Allowance	4,000	4,950	-	-	NY
c. Travel IHAP/SL					
Evaluation	4,000	-	4,000	3,327.16	
d. Travel, per diem CMB	3,000	-	3,000	2,479.13	
e. Male Housing	3,000	-	7,700	6,470.11	
f. Dhoni fuel & maintenance	5,000	-	11,900	11,899.45	
g. Contingency	6,000	-	-	-	
Subtotal:	<u>29,000</u>	<u>22,750</u>	<u>26,600</u>	<u>24,175.85</u>	NY
3. <u>Allowances</u>					
a. Differential	23,670	28,670	-	-	NY
b. Housing/Utilities	8,000	-	8,000	7,277.08	
Subtotal:	<u>31,670</u>	<u>28,670</u>	<u>8,000</u>	<u>7,277.08</u>	NY
4. <u>Audit</u>	<u>2,000</u>	<u>-</u>	<u>1,000</u>	<u>500.00</u>	
TOTAL TECHNICAL ASSISTANCE	164,350	170,060	46,450	42,401.77	NY
B. <u>Land, Equipment & Materials</u>					
1. Yacht Dhoni	15,000	-	16,300	16,266.67	
2. Dhoni Insurance	2,500	-	2,500	893.00	
3. Local Admin. Costs	2,000	2,400	5,150	4,994.69	NY
4. Contingency	<u>2,500</u>	<u>-</u>	<u>-</u>	<u>-</u>	
TOTAL LAND EQUIPMENT MATERIALS	22,000	2,400	23,950	22,154.36	NY
C. <u>Health Service Support</u>					
1. Hospital/Solar Unit	33,000	-	79,500*	78,977.96	
2. Contingency Cl*	6,600	-	-	-	
3. Water Supply	21,000	-	27,000	28,776.81	
4. Latrines	19,500	-	19,500	11,731.65	
5. Health Service Delivery	6,000	-	6,750	5,344.57	
6. Freight Cl*	5,950	-	-	-	
7. Contingency*	<u>7,950</u>	<u>-</u>	<u>-</u>	<u>-</u>	
TOTAL HEALTH SERVICE SUPPORT	100,000	-	132,750	124,830.99	

* Items C2, C6 & C7 of 1982 budget have been included in C1, 1984.

<u>Item</u>	<u>Budget '82</u>	<u>Budget '84</u>		<u>Expenditures</u>	
	TOTAL	IHAP/NY -	IHAP/M	IHAP/M NY	
D. <u>Agriculture/Income Generation</u>					
1. <u>Agriculture</u>					
a. <u>Rat/Bat Control</u>	6,000	-	9,250	6,231.34	
b. <u>Reforestation</u>	5,000	-	5,000	2,391.25	
c. <u>Gardening</u>	4,000	-	4,000	965.99	
Subtotal:	<u>15,000</u>	-	<u>18,250</u>	<u>9,588.58</u>	
2. <u>Loan Program</u>	<u>60,000</u>	-	<u>51,000</u>	<u>38,314.60</u>	
TOTAL AGRICULTURE/INCOME GENERATION	75,000	-	69,250	47,903.18	
E. <u>Other Program Activity</u>					
1. <u>Project Development</u>	4,000	-	4,500	3,570.62	
2. <u>School Support</u>	10,000	-	40,550	40,237.81	
3. <u>Island Sports</u>	1,500	-	990	297.00	
4. <u>Contingency</u>	<u>14,050</u>	-	-	-	
TOTAL OTHER PROGRAM ACTIVITY	29,550	-	46,040	44,105.43	
F. <u>IHAP Backstopping</u>					
1. <u>Indirect</u>	56,100	71,100	-	-	NY
2. <u>Direct</u>	<u>53,000</u>	<u>38,000</u>	-	-	NY
TOTAL IHAP BACKSTOPPING	109,100	109,100	-	-	NY
<u>GRAND TOTAL</u>	500,000	281,560	318,440	281,395.73	NY

(source: Project Managers)

**Appendix B, Table B: Overview of Expenditures and Contributions Administered
in the Maldives (US \$) per 27 January 1989**

<u>Line Item</u>	<u>USAID^{a)}</u>	<u>OPC</u>	<u>Benefic.^{b)}</u>	<u>IMAP^{c)}</u>	<u>Other</u>	<u>TOTAL</u>
A. <u>TECHNICAL ASSISTANCE</u>						
1. Personnel (local)	10,449	8,704	-	-	-	19,153
2. Travel & Transport	24,176	429	239	-	-	24,844
3. Allowances	7,277	484	-	-	-	7,761
4. Audit	900	-	-	-	-	900
Subtotal T.A.	<u>42,492</u>	<u>9,617</u>	<u>239</u>	-	-	<u>52,329</u>
B. <u>LAND EQUIPMENT MATER.</u>	<u>22,124</u>	<u>2,282</u>	-	-	-	<u>24,406</u>
C. <u>HEALTH SERVICE SUPP.</u>	<u>124,831</u>	<u>79,928^{d)}</u>	<u>17,313</u>	<u>132,230</u>	<u>29,100^{e)}</u>	<u>383,792</u>
D. <u>AGRICULTURE/IGA</u>						
1. Agriculture	9,588	1,138	3,228	-	-	13,954
2. Loan Progr. g	38,319	-	- ^{f)}	-	-	38,319
Subtotal AG/IGA	<u>47,907</u>	<u>1,138</u>	<u>3,228</u>	-	-	<u>52,273</u>
E. <u>OTHER PROGRAM ACT.</u>	<u>44,102</u>	<u>2,820</u>	<u>21,222</u>	-	<u>282^{g)}</u>	<u>68,426</u>
F. <u>BACKSTOPPING</u>	-	-	-	-	-	-
<u>TOTAL</u>	<u>281,292</u>	<u>104,096</u>	<u>22,032</u>	<u>132,230</u>	<u>29,382</u>	<u>569,432</u>

- Notes :**
- a) USAID, expenditures from OPC incurred and/or initiated by IMAP/M prior to January 28, 1989. Expenditures/contributions from all other sources are through end of project unless otherwise stated.
 - b) Beneficiaries: approx. 80% in kind, 20% cash. Approx. \$ 8,000,- of this will be contributed after PACD for watertank and school construction. Est. contributions for school, 70' long \$ 2,850,-; school, 50' long \$ 2,000,-; watertank, \$ 143,-M.A. Toilet \$ 20,-.
 - c) Does not include IMAP contribution for Expat P.M. benefits such as insurance and M.M. IMAP contr. under Health: PCM \$ 120,000,-; Drugs \$ 9,930; Footbath Training Program 10,000,- of which approx. 7,900 to be spent after PACD.
 - d) OPC contr. for Health incl: cash outlays for Hospital local materials \$ 12,000; furniture and generator \$ 11,000; recurrent hospital expenditures 4/84-3/89 \$ 43,000; and watertank imported mat. \$ 11,000.
 - e) include VSO, UNICEF and WHO contributions for resp.-volunteer support; Nurse-aid training, equipment and drugs; and footbath kits.
 - f) While mentioned Beneficiaries' contribution in [P.A. budget, contributions to loan ventures have not been included here (Stipulated at 25% min.).
 - g) Private contribution for beds and chairs for RADC when RADC unable to fulfill its commitments.

(source: Project Manager)

**Appendix 8.C: Outline Proposal For A Three Year
Follow-up Evaluation of the RAIDP**

1. Evaluation Methodology

The evaluation team will be composed of an evaluator/socio-economist, a specialist in community health (both contracted by USAID) and one or two representatives of GRM (preferably a structural engineer and an agriculturalist). The evaluation will be undertaken in April 1988 and, will work according to the following timetable.

	<u>Work days</u>
1. Review of Documentation and Preparation of Evaluation Strategy	5
2. Travel to Male, interviews in Male, review of data in Male, organisation of island program	7
3. Travel to and from the islands, visits to the islands. Begin report drafting.	19
4. Follow-up interviews and data collection in Male.	5

2. Evaluation Purpose

To determine the impact which the Raa Atoll Integrated Development project has had in Raa Atoll after 3 years from project completion, in the fields of health, nutrition, education, agriculture, income generation, Community Based Integrated Rural Development, and general development strategy in the Maldives.

3. Evaluation Guidelines

The evaluation will address the following questions:

- a. To what extent have the investments in human and material capital made under the IHAP project (the project outputs) been maintained? What has been the absolute and relative

contribution of the islanders, the IDCs (men's and women's), the ADCs, and the GRM to this maintenance? Which recommendations in the evaluation report have been implemented? To what extent? Why, or why not, were the recommendations implemented?

- b. What new investments (in human as well as material capital), if any, have been a direct consequence of the IHAP project? What new investment, if any, has been an indirect consequence of the IHAP project? Analyze and explain these results.
- c. What has been the measurable impact of these investments on the purposes of the project, as enumerated in the modified logical framework included in the end-of-project evaluation report (Table Summ.1)? Who have been the beneficiaries?
- d. What conclusions can be drawn regarding the effectiveness of the material designs and CBIRD approach used in the IHAP project? What have been the major constraints and contributors to the long-term success of the project?
- e. What lessons can be drawn from this experience with regard to future development, policy and strategy in the Maldives?

4. Evaluation Budget

USAID CONTRIBUTION	<u>US \$</u>
1. Contractor Fees -- 2 evaluators	
-- 100 man days @ \$ 200/day	20,000
2. Per diem -- 100 man days @ \$ 80/day	8,000
3. International travel -- 2 x \$ 1500	3,000
4. Travel in Maldives -- 19 days @ \$ 100/day	1,900

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USAID CONTRIBUTION (Cont'd)

5. Stationery, communications, report typing and printing @ \$ 30/copy for 40 copies 1,300

TOTAL \$ 34,200

GRM CONTRIBUTION

1. Salary per diem for 2 Maldivian representatives.
2. Office/work space for team in Male.
3. Logistical arrangements for travel, accommodation and food in Maldives.
4. Salary, per diem for 2 interpreters.

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Appendix 9.A: Measurable Achievements of Anticipated Project

Outputs

<u>Output</u>	<u>Unit</u>	<u>Target</u>	<u>Actual</u>
Regional Hospital	Buildings	3	3
Hospital Equipment	PDH	1	1
Hospital Energy Supply	Solar Generator	1	1
Hospital Energy Supply	Diesel Generator	1	1
Hospital Staff	Persons	30*	20
Hospital Furniture	Furnished Rooms	22	22
Hospital Medicines	Stocked Dispensary	1	1
Island School	Buildings	11	10c., 2 u.c.
School Furniture	Schools	11	4c., 6 u.c., 1 p.
Trained Teachers/in tng.	Placed/in tng	8/3	9/2
Training Center	Buildings	2	2
Water Catchment Tanks	Tanks (10m ³)	60	24
Latrines (Ash Latrine)	Latrines	450	39
Formal Training	Persons/Courses	250/20	243/22
Rat Control 1	Islands	16	7 (3 successful)
Rat Control 2	Islands	13	13 (10 successful)
Rat Control 3	Islands	3	0
Monthly Growth Monitoring	Islands	14	15
Foolhuma Training	Persons	10	4
Bat Control	Islands	7	3
Gardening	Gardens	10	0
Loan Program	Dollars/ Repayment	\$ 50,000/100%	\$ 37,588/100%

* anticipated \$ 51,000/100% by 3/1/85