

CHAPTER 4

PROJECT EVALUATION AND RECOMMENDATION

CHAPTER 4 PROJECT EVALUATION AND RECOMMENDATION

4-1 Project Effect

As stated earlier, of the 266 inhabited islands of the Maldives, only 12 atoll islands receive electricity from the MEB and the inconvenience caused by the lack of electricity supply is one of the factors of the unipolarisation of the population on Male Island, i.e., the capital island. This unipolarisation has resulted in a large gap between the standard of living of those people on Male Island and those on other atoll islands, causing serious problems in regard to the daily lives of ordinary people and economic/industrial activities, etc.

In order to improve the situation above, the Government of the Maldives and the MEB have been promoting the Atoll Islands Electrification Programme in all the national development plans from the 1st Plan launched in 1985 to the current 4th Plan but the actual implementation of the programme has been slow even in the case of those islands which are the administrative seats of their respective atolls due to the tight financial situation of the government.

The Project mainly intends the supply of stable, high quality electricity for the inhabitants of Hulhudhoo/Meedhoo Island and Hithadhoo Island of the Seenu Atoll located in the southernmost part of the country and improvement of the existing power distribution facilities. Seenu Atoll is officially regarded as the second key development area in the Maldives after Male Island and has many marine animals and other tourism resources normally associated with a coral island. Hithadhoo Island has the second largest population of some 12,000 after Male Island and has many public welfare facilities, such as hospitals, health centres, primary and secondary schools (the only secondary schools in the Maldives outside Male Island), a vocational training centre, telephone exchange and banks, etc. Gan Island of the Seenu Atoll has an airport which has the prospect of becoming an international airport and harbour facilities for large vessels, occupying strategic status in the country's economic and industrial development.

Although the electrification rate of these islands is above 90%, the actual supply, which is operated by private companies (responsible for generation, distribution and charge collection) on a provisional basis until a public power supply is introduced, significantly lacks reliability, stability and technical uniformity, causing much inconvenience in the lives of the islanders and in the running of social welfare and

restricted to 3-5 hours/day because of the inadequate generating capacity. The Hulhudhoo area is technically supplied with electricity for 12 hours/day but the mostly second-hand generating facilities often break down, causing power failures. Moreover, the inappropriate distribution network causes voltage drops of more than 25%, making the running of even health centres difficult. In contrast, while Hithadhoo Island has an adequate generating capacity to meet the present demand, its distribution facilities were constructed without proper planning using second-hand materials from Male Island and voltage drops of more than 25% occur, causing problems in the running of such social welfare and public facilities as schools and hospitals as in the case of Hulhudhoo/Meedhoo Island.

Given the present conditions of these islands, the Project intends the construction of a power station and the provision of distribution equipment and materials and, therefore, the objectives of the Project conform to the targets of the National Development Plan. The stable supply of electricity to these islands following the completion of the Project will not only improve the general lives of the islanders but will also enable the steady operation of the social welfare and public facilities on the islands. It is hoped that these positive effects of the Project will help to narrow the gap between the living standard of the inhabitants of Male Island and those of these two subject islands.

As already described, the MEB (with 661 employees as of August, 1995), the project implementation body on the Maldives side, will be responsible for the installation of the distribution equipment and materials to be provided under the Project and also for the operation and maintenance of the new power station and distribution facilities after the completion of the Project. The planned 25 operation and maintenance staff will be publicly recruited from among local islanders as in the case of the Phase I Project since this method of recruitment proved both realistic and appropriate. The Government of the Maldives approved the appropriation of 19 million Rf (approximately 173 million yen) in September, 1994 for the implementation of the Project. The power supply services currently run by private companies on the islands will have been handed over to the MEB by the time of the Project's commencement with grant aid provided by the Government of Japan. The process of handing over the power supply services to the MEB, including the transfer of generators from the present owner, i.e. the Ministry of Atoll Administration, has in fact already commenced.

The operation cost of the generating facilities to be provided for Hulhudhoo/Meedhoo Island under the Project will not be fully met by the electricity tariff currently imposed by the MEB for atoll islands (1.5 Rf/kWh) and will require to be supplemented from the

surplus on Male Island as in the case of the other atoll islands served by the MEB. However, the balance is expected to go into the black on the basis of the said generator's 70% operation rate if the electricity tariff is revised to 2 Rf/kWh. With this charge level, the future replacement cost of the facilities, i.e., depreciation cost of the facilities in use) can be saved up to ensure self-reliant operation.

Among the equipment to be procured under the Project, the generating unit has the strongest implications vis-à-vis the environment. The planned measures for noise and exhaust gas should minimise any adverse impacts on the islanders living in the vicinity of the power house.

All of the above considerations suggest that the implementation of the Project with grant aid provided by the Government of Japan should be smooth and that the positive effects of the Project are great enough to justify the Project's implementation. The direct beneficiaries of the Project will be 5,327 people on Hulhudhoo/Meedhoo Island and 11,652 people on Hithadhoo Island. In addition, the indirect benefits of the Project will be enjoyed by approximately all the 21,000 people of the Seenu Atoll. Furthermore, the Project should help to alleviate the excessive population concentration on Male Island.

Current Situation and Problems	Improvement Measures Under the Project	Resulting Positive Effects/Improvements by the Project
<p>[Hulhudhoo/Meedhoo Island]</p> <p><u>I. Hulhudhoo Area</u></p> <p>Existing Generators: Out of 4 generators, 3 are second-hand and are prone to break-downs. The unreliability of these generators together with the difficulty of obtaining spare parts has resulted in a limited supply of 12 hours/day. One generator (45 kW) provided by the Ministry of Atoll Administration is fine.</p> <p><u>II. Meedhoo Area</u></p> <p>Existing Generators: Only one generator (45 kW) provided by the Ministry of Atoll Administration is in operation, meeting only 50% of the current demand and some 32% of the estimated demand in the year 2000, resulting in the limited supply of 3 - 5 hours/day.</p> <p><u>III. Common Features</u></p> <ol style="list-style-type: none"> 1. Distribution Network: This is dangerous as second-hand materials from Male Island are used together with too close positioning of the overhead wires to houses. 2. Voltage Fluctuation: The voltage drop is as large as more than 25%, disrupting the use of domestic electrical equipment/systems and such social welfare facilities as health centres. 3. Electricity Tariff: The current charge is as high as 3.5 Rf/kWh because of private operation which is double the level charged by the MEB on other atoll islands and is a heavy burden on the peoples. 	<ol style="list-style-type: none"> 1. A power house will be constructed based on the estimated demand in the year 2000 to provide 24 hours/day supply (3 × 165 kW generators, of which one is a reserve; space for an extra generator will also be provided in view of future expansion). 2. Appropriate distribution equipment and materials will be supplied to provide a stable supply for users in that the voltage drop for consumers is less than 7.5%. 	<ol style="list-style-type: none"> 1. The completion of the new generating facilities will establish 24 hours/day supply of stable power, thus improving public life and the steady operation of social welfare and public facilities. 2. The improved distribution network will provide a stable power supply with no power cuts or voltage drops for both public and private users 3. The gap between the living standard of this island and Male Island will be reduced. 4. The establishment of a public power supply system will introduce the same electricity charge as other atoll islands, reducing the electricity bill for both public and private users.

Current Situation and Problems	Improvement Measures Under the Project	Resulting Positive Effects/Improvements by the Project
<p>[Hithadhoo Island]</p> <ol style="list-style-type: none"> 1. Existing Generators: 4 × 160 kW generators are on loan by the Ministry of Atoll Administration to two private companies which are responsible for their operation and maintenance. 2. Voltage Fluctuation: The voltage drop is as large as more than 25%, causing many problems for domestic electrical equipment and such social welfare/public facilities as hospitals, health centres and schools. 3. Electricity Tariff: The current charge is as high as 3.5 Rf/kWh because of private operation which is double the level charged by the MEB on other atoll islands and is a heavy burden on the peoples. 	<ol style="list-style-type: none"> 1. Appropriate distribution equipment and materials will be supplied to provide a stable supply for users in that the voltage drop for end users is less than 7.5%. 	<ol style="list-style-type: none"> 1. The improved distribution network will provide a stable power supply with no power cuts or voltage drops for both public and private users for 24 hours/day. 2. The gap between the living standard of this island and Male Island will be reduced. 3. The establishment of a public power supply system will introduce the same electricity charge as other atoll islands, reducing the electricity bill for both public and private users.

4-2 Recommendation

The Project is expected to have many benefits as described earlier, contributing to improving the BHN of the islanders and its suitability as a grant aid project of the Government of Japan has been confirmed. On the part of the Maldives, there are sufficient manpower and proper financial arrangements for the smooth implementation of the Project and the subsequent operation and maintenance of the new facilities. Further improvement/strengthening of the following points will, however, ensure the smoother and more effective implementation of the Project.

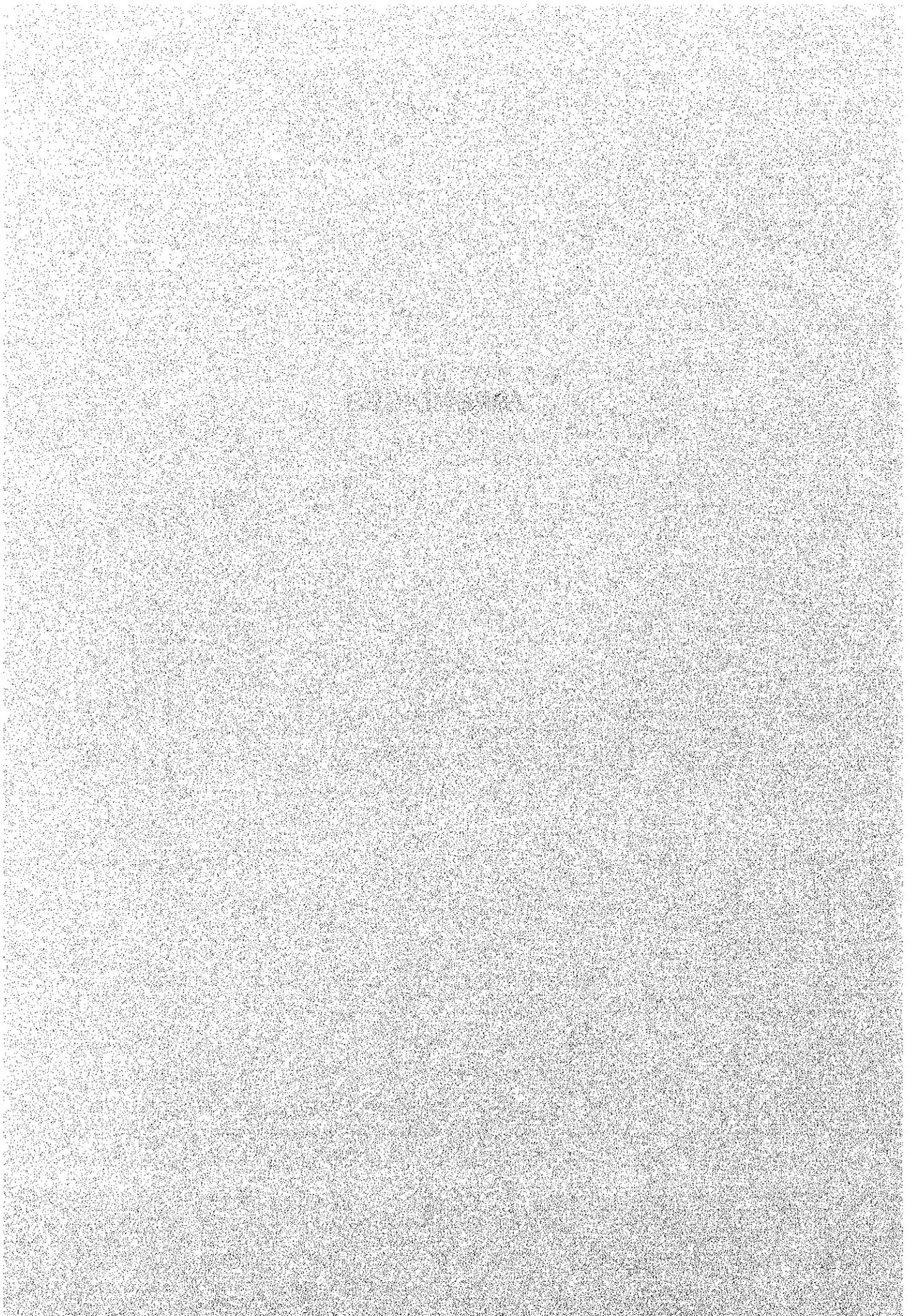
- (1) The Government of the Maldives and the MEB should arrange the systematic transfer of the existing generating and distribution facilities currently managed by private companies to the MEB so that the entire transfer process is completed by the time of the commencement of the construction work by the Japanese side under the Project.

construction work by the Japanese side under the Project has been completed in order to increase the number of islands which have a public supply of electricity.

- (3) In order to establish an electricity generating and supply business which is capable of self-reliant expansion, the electricity charge should be set at a reasonable level which is necessary to not only cover the operation cost but also to meet the depreciation cost, etc., in view of facility renewal in the future. In this context, it is recommended that the current rate of 1.5 Rf/kWh adopted by the MEB for local atoll islands be increased to 2.0 Rf/kWh.
- (4) The electricity rate system should preferably be one of a gradual increase with the unit charge increasing in accordance with a higher level of consumption in order to provide an incentive to economise for large users and a lower rate for the poor.
- (5) The Government of the Maldives should examine the possibility of introducing measures designed to subsidise the poor and social welfare facilities, etc., in regard to the cost of providing service wires for users in order to quickly achieve full connection to all households and public buildings, etc.
- (6) The Government of the Maldives should have a full understanding of the facilities and equipment constructed or installed under the Project and should prepare a detailed operation and maintenance programme to ensure a stable and reliable electricity supply. It is also required to swiftly appoint operation and maintenance staff so that they can participate in the OJT to be provided as part of the Project.
- (7) The Government of the Maldives should organize an installation team to be assigned to lead the swift installation of the distribution equipment and materials to be provided under the Project, should prepare an installation schedule, personnel plan and equipment and materials procurement plan to finish the work by the planned completion date of the Project and should make all necessary budgetary arrangements without delay.
- (8) The MEB should review the work assignments and staff strength (approximately 25 persons) at each power station on the atoll islands from time to time to achieve rational management in view of minimising the cost through a reduction of manpower.

- (9) The Government of the Maldives should conduct a survey on the feasibility of employing alternative energies, including solar power, to strengthen the understanding of the country's natural energy resources together with research on a viable way of alleviating the current dependence on imported energy in the coming years.

APPENDICES



APPENDIX 1

MEMBER LIST OF THE SURVEY TEAM

EXHIBIT A

STATE OF CALIFORNIA

Members of the Basic Design Study Team

Name	Assignment	Current Position/Company
Hayao ADACHI	Leader	Development Specialist, Institute for International Cooperation, JICA
Mutsuharu NAKAJIMA	Grant Aid Cooperation	Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Tetsuo YABE	Project Coordinator	First Basic Design Study Division, Grant Aid Study & Design Department, JICA
Mitsuhisa NISHIKAWA	Chief Consultant (Generation Planning, Operation & Maintenance)	Yachiyo Engineering Co., Ltd.
Masayuki TAMAI	Generation Facility Planning	Yachiyo Engineering Co., Ltd.
Masatsugu KOMIYA	Distribution Facility Planning	Yachiyo Engineering Co., Ltd.

Members of the Explanation Team for the Draft Basic Design

Name	Assignment	Current Position/Company
Hayao ADACHI	Leader	Development Specialist, Institute for International Cooperation, JICA
Takuya MITANI	Grant Aid Cooperation	Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Mitsuhisa NISHIKAWA	Chief Consultant (Generation Planning, Operation & Maintenance)	Yachiyo Engineering Co., Ltd.
Masayuki TAMAI	Generation Facility Planning	Yachiyo Engineering Co., Ltd.

APPENDIX 2

SURVEY SCHEDULE

MEMORANDUM

TO : THE PRESIDENT

1. Basic Desing Study

Survey Schedule

Day	Date	Day of Week	Weather	Over-night	Movement	Activities
1	July 31	Mon.	fair	Male	Dep. Narita 11:30 (JL-719) Arrive Singapore 17:30 Dep. Singapore 22:30 (SQ-452) Arrive Male 23:50	- Departure from Tokyo - In transit
2	Aug. 1	Tue.	fair	Male		- Visit to the Ministry of Finance and Treasury (MOFT), explanation of goal and outline of survey - Visit to Maldives Electricity Board (MEB), explanation of Inception Report
3	Aug. 2	Wed.	fair	Male		- Visit to MEB, meeting on target islands for electrification - Team meeting at hotel
4	Aug. 3	Thurs	fair	Male		- Field survey at Villingili - Team meeting at hotel
5	Aug. 4	Fri.	fair	Gan	Dep. Kurumba Village 6:45 (speedboat) Arrive Hulule 7:00 Dep. Hulule 8:00 Arrive Gan 9:30 (small plane) Dep. Gan 15:00 (doni) Arrive Hulhudhoo/Meedhoo 15:30 Dep. Hulhudhoo/Meedhoo (doni) Arrive Gan 16:00 Dep. Gan 18:30 (taxi) Arrive Hithadhoo 19:30 Dep. Hithadhoo 21:00 (taxi) Arrive Gan 22:00	- Study of existing MEB power station on Gan, visit to MEB office for data collection - Field survey on Hulhudhoo/Meedhoo and study of existing power station - Field survey on Hithadhoo and study of existing power station (Matra and Plaza) - Visit to Hithadhoo Authorities for data collection
6	Aug. 5	Sat.	fair	Male	Dep. Gan 7:00 (taxi) Arrive Hithadhoo 8:00 Arrive Gan 9:00 Dep. Gan 10:00 (small plane) Arrive Hulule 11:30 Dep. Hulule 12:00 (speedboat) Arrive Kurumba Village 12:15 Dep. Kurumba Village 16:15 (speedboat) Arrive Male 16:30 Dep. Male 18:30 (speedboat) Arrive Kurumba Village 18:45	- Visit to Hithadhoo Island Authorities, data collection from head of Matra and Plaza power station - Visit to MOFT to report field survey findings

Day	Date	Day of Week	Weather	Over-night	Movement	Activities
7	Aug. 6	Sun.	fair	Male		<ul style="list-style-type: none"> - Visit to MEB to report results of survey and discuss target islands for electrification - Visit to Ministry of Trade and Industry to discuss target islands for electrification - Visit to Ministry of Planning, Human Resources and Environment
8	Aug. 7	Mon.	fair	Felivaru	Dep. Kurumba Village 6:30 (speedboat) Arrive Naifaru 9:45 Dep. Naifaru 11:30 (speedboat) Arrive Hulhudhuffaar 13:00 Dep. Hulhudhuffaar 15:00 (speedboat) Arrive Felivaru 16:30	<ul style="list-style-type: none"> - Study of power station on Naifaru (Phase I) - Field study on Hulhudhuffaar and study of existing MEB power station - Mr. Nakajima (team member) leaves for Japan (EK-811, 12:25 - 14:15 arrive in Colombo)
9	Aug. 8	Tue.	fair	Male	Dep. Felivaru 7:30 (speedboat) Arrive Eydhafushi 8:30 Dep. Eydhafushi 10:30 (speedboat) Arrive Kurumba Village 13:00	<ul style="list-style-type: none"> - Study of power station on Eydhafushi (Phase I) - Team meeting at hotel
10	Aug. 9	Sun.	fair	Male		<ul style="list-style-type: none"> - Discussion of M/D with vice-minister of MOFT - Team meeting at hotel
11	Aug. 10	Thurs	fair	Male		<ul style="list-style-type: none"> - Visit to MEB to discuss M/D - Visit to MOFT to discuss and sign M/D - Mr. Adachi (team leader) and Mr. Yabe (team member) leave for Japan (UL-102, 15:10 - 17:10 arrive Colombo)
12	Aug. 11	Fri.	fair	Male		Sorting and analysis of collected data
13	Aug. 12	Sat.	fair	Male		Visit to MEB to collect data and prepare field survey report
14	Aug. 13	Sun.	fair	Male		as above
15	Aug. 14	Fri.	fair cloudy	Male		as above
16	Aug. 15	Tue.	cloudy occasional heavy rain	Male		as above
17	Aug. 16	Sun.	fair cloudy	Male		as above
18	Aug. 17	Thurs	fair	Male		as above
19	Aug. 18	Fri.	cloudy occasional rain	Male		Sorting and analysis of collected data

Day	Date	Day of Week	Weather	Over-night	Movement	Activities
20	Aug. 19	Sat.	fair	Gan	Dep. Kurumba Village 6:45 (speedboat) Arrive Hulule 7:00 Dep. Hulule 8:00 (small plane) Arrive Gan 9:30 Dep. Gan 13:00 (taxi) Arrive Hithadhoo 13:45 Dep. Hithadhoo 19:00 (taxi) Arrive Gan 19:45	<ul style="list-style-type: none"> - Visit to MEB office on Gan to collect data - Visit to and data collection at following public facilities on Hithadhoo: - Telephone exchange under construction - Vocational training center - Junior high school - Hospital
21	Aug. 20	Sun.	cloudy occasional rain	Gan	Dep. Gan 9:00 (doni) Arrive Hulhudhoo/Meedhoo 10:10 Dep. Hulhudhoo/Meedhoo 14:30 Arrive Gan 15:50	<ul style="list-style-type: none"> - Visit to and data collection at following public facilities on Hulhudhoo/Meedhoo: - Island Authorities - Hospital - Elementary school - Field study of proposed power station site - Discussion of proposed transformer station site on Hithadhoo with MEB counterpart
22	Aug. 21	Mon.	fair	Gan	Dep. Gan 9:00 (taxi) Arrive Hithadhoo 9:45 Dep. Hithadhoo 12:15 (taxi) Arrive Gan 13:00	<ul style="list-style-type: none"> - Field study of proposed transformer station site on Hithadhoo - Discussion of distribution system with MEB counterpart
23	Aug. 22	Tue.	cloudy occasional rain	Male	Dep. Gan 19:30 (small aircraft) Arrive Hulule 21:30 Dep. Hulule 22:00 (speedboat) Arrive Kurumba Village 22:15	<ul style="list-style-type: none"> - Team meeting - Discussion of distribution system with MEB counterpart
24	Aug. 23	Wed.	fair occasional clouds	Male		<ul style="list-style-type: none"> - Visit to MEB to collect data and prepare field survey report
25	Aug. 24	Thurs	fair	Male		as above
26	Aug. 25	Fri.	fair	Male		<ul style="list-style-type: none"> - Sorting of data
27	Aug. 26	Sat.	fair	Male		<ul style="list-style-type: none"> - Visit to MEB to explain and discuss field survey report
28	Aug. 27	Sun.	cloudy rain	Male		as above
29	Aug. 28	Mon.	cloudy rain	Male		as above
30	Aug. 29	Tue.	cloudy rain	Male		<ul style="list-style-type: none"> - Visit to MEB to discuss and sign field survey report - Report survey results to MOFT

Day	Date	Day of Week	Weather	Over-night	Movement	Activities
31	Aug. 30	Wed.	Male: cloudy Colombo: cloudy	Nishikawa and Komiya in Colombo	Mr. Nishikawa and Mr. Komiya (team members) Dep. Male 10:00 (UL-102) Arrive Colombo 12:00	- Team members Nishikawa and Komiya to Colombo - Visit JICA Colombo office to report survey results - Courtesy visit to Japanese Embassy in Sri Lanka, report of survey results - Team member Tamai visits MEB to collect information
32	Aug. 31	Thurs	Colombo: cloudy Singapore: cloudy	Nishikawa and Komiya in Colombo; Tamai in Singapore	Mr. Tamai (team member) Dep. Male 00:55 (SQ451) Arrive Singapore 08:40	- Team members Nishikawa and Komiya sort collected data in Colombo - Team member Tamai goes from Male to Singapore, sorts collected data in Singapore
33	Sept. 1	Fri.	Colombo: cloudy Singapore: cloudy	Nishikawa and Komiya in Colombo Tamai in Singapore		- Team members Nishikawa and Komiya sort collected data in Colombo - Team member Tamai sorts collected data in Singapore
34	Sept. 2	Sat.	Singapore: cloudy	in transit	Mr. Nishikawa and Mr. Komiya (team members) Dep. Colombo 10:30 (UL-302) Arrive Singapore 16:20 Dep. Singapore 22:45 (JL-710)	- Team members Nishikawa and Komiya go from Colombo to Singapore - Team member Tamai sorts collected data in Singapore - Team members Nishikawa, Komiya, and Tamai in transit
35	Sept. 3	Sun.	fair		Arrive Narita 06:25	-In transit -Arrive at Narita

2. Explanation for the Draft Basic Design

Day	Date	Day of Week	Weather	Overnight	Movement	Activities
1	Oct. 25	Wed.	fair	Male	Dep. Narita 11:30 (JL-719) Arrive Singapore 17:30 Dep. Singapore 22:30 (SQ-452) Arrive Male 23:50	- Departure from Tokyo - In transit
2	Oct. 26	Thu.	fair	Male		- Visit to the Ministry of Finance and Treasury (MOFT), explanation of outline of survey - Visit to Maldives Electricity Board (MEB), explanation of Draft Report
3	Oct. 27	Fri.	fair	Gan	Dep. Kurumba Island (speedboat) Arrive Hulule Dep. Hulule 14:30 (small plane) Arrive Gan 16:10	- Team meeting
4	Oct. 28	Sat.	fair	Gan	Dep. Gan (doni) Arrive Meedhoo/ Hulhudhoo Dep. Meedhoo/ Hulhudhoo (doni) Arrive Gan	- Field survey on Meedhoo/Hulhudhoo
5	Oct. 29	Sun.	fair	Male	Dep. Gan Arrive Hithadhoo Dep. Hithadhoo Arrive Gan Dep. Gan 18:00 Arrive Hulule 19:40 Dep. Hulule (speedboat) Arrive Kurumba	- Visit to MEB's temporary office on Hithadhoo - Field survey on Hithadhoo
6	Oct. 30	Mon.	fair	Male		- Explanation and discussion of the outline of the Basic Design to the MOFT and MEB
7	Oct. 31	Tue.	fair	Male		- as above - Conclusion of the Minutes of Discussion
8	Nov. 1	Wed.	fair	Male		- Courtesy visit to the MOFT and MEB - Organization of material
9	Nov. 2	Thu.	fair	Singapore	Dep. Male 00:55 (SQ-451) Arrive Singapore 08:40	- In transit
10	Nov. 3	Fri.	fair		Dep. Singapore 22:45 (JL-712) Arrive Narita 15:45	- In transit - Arrive at Narita

APPENDIX 3

LIST OF PARTY CONCERNED IN THE RECIPIENT COUNTRY

CONSTITUTION

ARTICLE I SECTION 1

All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

List of Party Concerned in the Recipient Country

<u>Name and Ministry/Agency</u>	<u>Position</u>
Ministry of Finance and Treasury	
Hon. Arif Hilmy	Minister
Mr. Adam Manik	Deputy Minister
Mr. Ibrahim Mohamed Didi	Deputy Director
Mr. Adheel Ismail	Project Officer
Miss. Aishath Azeema	Project Officer
Mr. Mohamed Hazmath	Assistant Undersecretary
Ministry of Planning, Human Resources and Environment	
Hon. Ismail Shafeeu	Minister
Mr. Asim Ahmed	Assistant Director, Programmes
Mr. Ahmed S. Yoosuf	Assistant Programme Analyst
Ministry of Trade and Industry	
Hon. Abdulla Yaameen	Minister
Ministry of Atoll Administration	
Hon. Abdul Rasheed Hussain	Minister
Maldives Electricity Board	
Mr. Mohamed Saeed	Managing Director
Mr. Abdul Shuakoor	Deputy Managing Director
Dr. Ibsahim Nashid	Director Engineering
Mr. Abdulla Fahthah	Director
Mr. Mohamed Naeem Ahmed	Director of Finance and Accounts
Mr. Ibrahim Zuhudi	Accounts Officer
Mr. Ahmed Nazim	Engineer
Mr. Moosa Sameer	Senior Electrical Supervisor
Mr. Mohamed Hameez	Senior Mechanical Supervisor
Mr. Ahmed Niyaz	Assistant Electrical Engineer
Mr. Fayz Waheed	Assistant Mechanical Engineer
Maldives Electricity Board, Gan Island (Seenu Atoll) Power House	
Mr. Ahmed Solih Ali Didi	Manager
Mr. Mohamed Qasim	Office Assistant
Mr. Ibrahim Shareeb	Senior Supervisor
Mr. Abdulla Zahir	Senior Supervisor
Mr. Moosa Hassan Didi	Supervisor
Mr. Ali Didi	Supervisor
Mr. Hassan Abdul Samad	Supervisor

Male Housing and Urban Development Board

Mr. Abdullah Salcem Deputy Director

Hulhudhoo/Meedhoo Island in Seenu Atoll

Mr. Mohamed Naseem Island Chief (Meedhoo)
Mr. Ali Abdulla Nanikfan Island Chief (Hulhudhoo)
Mr. Hassan Shafeeg Katheeb of Office (Meedhoo)
Mr. Ahmed Shathir Secretary of Island Office (Meedhoo)
Mr. Mohamed Rasheed Headmaster of Primary School (Meedhoo)

Hithadhoo Island in Seenu Atoll

Mr. Ahmed Fulhu Atoll Chief
Mr. Ibrahim Nafees Assistant Atoll Chief
Mr. Abdulla Hani Assistant Atoll Chief
Mr. Hassan Latheef Island Chief
Mr. Ali Mufeed Assistant Island Chief
Mr. Abdul Hameed Assistant Island Chief
Mr. Ibrahim Rasheed Assistant Island Chief
Mr. Ahmed Naseer Assistant Island Chief
Mr. Ibrahim Labeeb Assistant Island Chief
Mr. Ahmed Ali Assistant Secretary
Mr. Ahmed Zahir Chief Engineer in Plaza Power Supply Unit
Mr. Ahmed Hilmy Engineer in Matrana Power House
Mr. Abdullah Saeed Regional Health Administrator in Regional Hospital

Hulhudhuffaru Island

Mr. Abdula Raheen Hassan Island Chief
Mr. Mohamed Zahem Assistant Island Chief

Embassy of Japan in Sri Lanka

Mr. Hiroyuki Morimoto Second Secretary

JICA Sri Lanka Office

Mr. Yoshikatsu Nakamura Resident Representative
Mr. Akira Suzuki Deputy Resident Representative
Mr. Chikao Okabe Deputy Resident Representative
Mr. Shinji Yoshiura Staff Member

JOCV Regional Hospital in Addu Atoll

Miss. Yoko Kobayashi Inspector

APPENDIX 4

MINUTES OF DISCUSSION

THE UNIVERSITY OF CHICAGO

PHILOSOPHY DEPARTMENT

1. Basic Design Study

MINUTES OF DISCUSSIONS

**BASIC DESIGN STUDY
FOR
ATOLL ISLAND ELECTRIFICATION PROJECT(PHASE II)
IN
THE REPUBLIC OF MALDIVES**

In response to a request from the Government of the Republic of Maldives, the Government of Japan decided to conduct a Basic Design Study on Atoll Island Electrification Project (Phase II) (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Maldives a study team, which is headed by Mr. Hayao ADACHI, Development Specialist, Institute for International Cooperation, JICA, and is scheduled to stay in the country from July 31 to August 30, 1995.

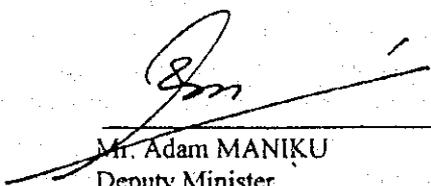
The team held discussions with the officials concerned of the Government of Maldives and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study report.

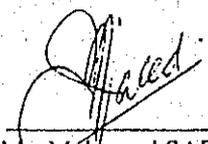
Male', August 10, 1995



Mr. Hayao ADACHI
Leader
Basic Design Study Team
JICA



Mr. Adam MANIKU
Deputy Minister
Department of External Resources
Ministry of Finance and Treasury
The Republic of Maldives



Mr. Mohamed SAEED
Managing Director
Maldives Electricity Board (MEB)

ATTACHMENT

1. Title of the Project

The official title of the Project is Atoll Island Electrification Project (Phase II) in the Republic of Maldives.

2. Objective

The objective of the Project is to provide regular, reliable and constant supply of electricity to every households and buildings in the selected islands in Seenu Atoll.

3. Project Sites

The Project sites are located at Hulhudhoo/Meedhoo and Hithadhoo Islands in Seenu Atoll as shown in ANNEX- I.

4. Executing Agency

The Ministry of Finance and Treasury is responsible for the administration of the Project and the Maldives Electricity Board (MEB) is responsible for implementation of the Project. The organization of MEB is shown in ANNEX- II.

5. Items Requested by the Government of Maldives

After discussions with the Basic Design Study Team, the following items were finally requested by the Maldivian side.

(1) Generating Facilities, Equipment and Materials for Hulhudhoo/Meedhoo Island.

- 1) Supply and installation of three(3) sets of Diesel Engine Generators including necessary electrical equipment and auxiliaries(DEG set) .
- 2) Supply of spare parts for two(2) years and maintenance tool for DEG set .
- 3) Supply and installation of the workshop equipment and the communication equipment necessary for the power station.
- 4) Provision of Operation and Maintenance Manuals for DEG set.

(2) Power Distribution Equipment and Materials for Hulhudhoo/Meedhoo and Hithadhoo Islands.

- 1) Supply of power distribution cables, distribution panels and grounding materials.

(3) Construction of a power house building and equipment foundations necessary for DEG set including building services, rain water collecting & supply system, well water supply system and sewerage system within the power station, for Hulhudhoo/Meedhoo Island.

(4) On-the-Job Training(OJT)

OJT for installation, operation and maintenance techniques of DEG set during construction period.

The both parties understand that the following conditions have been involved in the request:

- a) Because the existing generating capacity in Hithadhoo Island is sufficient to provide electricity to the requirement of the island, the team and MEB understood that only Power Distribution Equipment and Materials are required to fulfill the present power supply system in Hithadhoo Island. In Hithadhoo Island, therefore, the Project will provide Power Distribution Equipment and Materials such as distribution cables, distribution panels and grounding materials.
- b) The existing electricity system in Hithadhoo Island shall be taken over by MEB before the implementation of Japan's Grant Aid. The JICA will confirm the Government's authorization of the program for the MEB's taking over of the system, by the end of September, 1995.
- c) The existing generating facilities in Hulhudhoo/Meedhoo Island shall be properly utilized to other Islands' electrification in accordance with the program to be established by MEB. MEB shall establish the program by the end of September, 1995.

However, the final components of the Project will be decided after further studies.

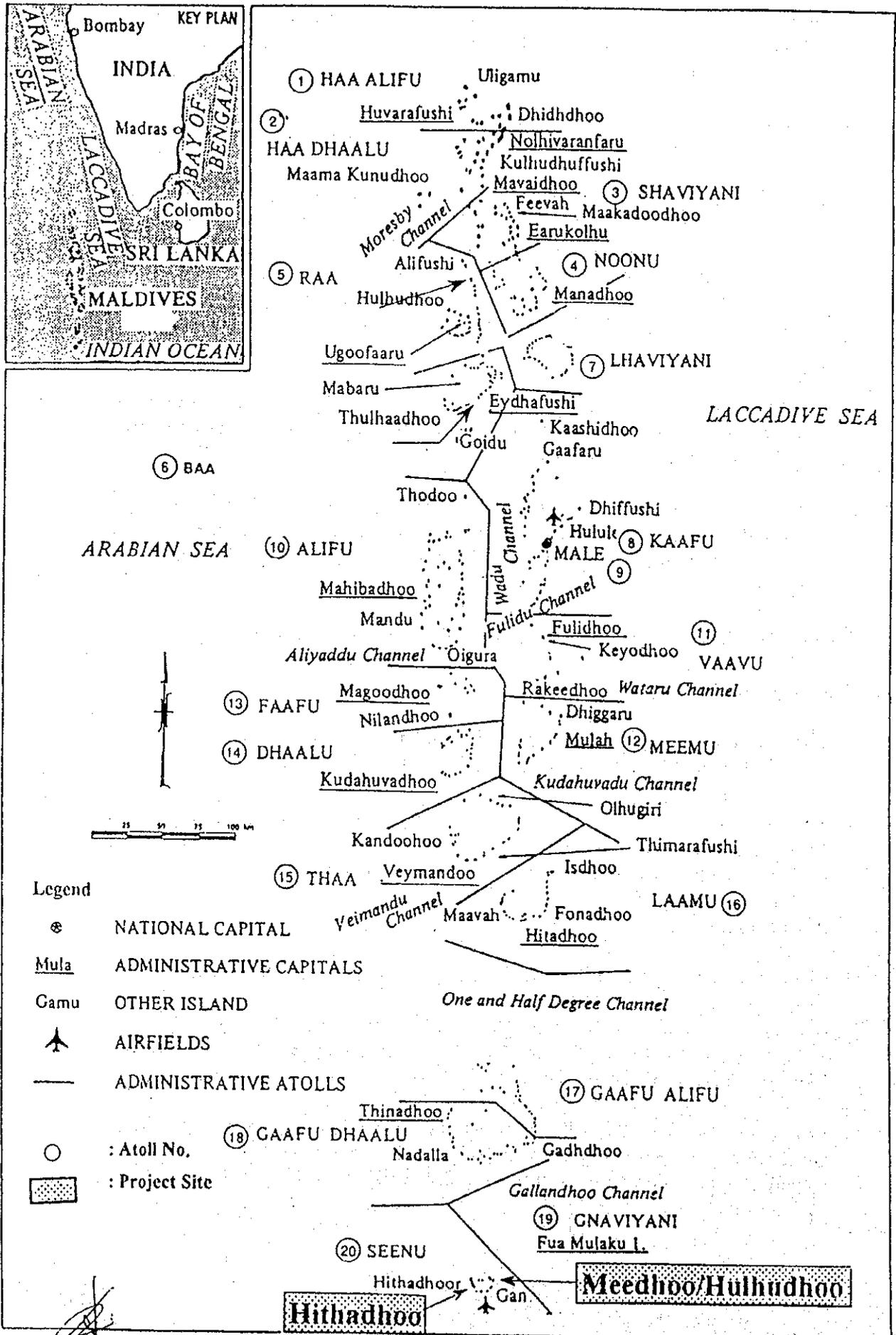
6. Japan's Grant Aid System

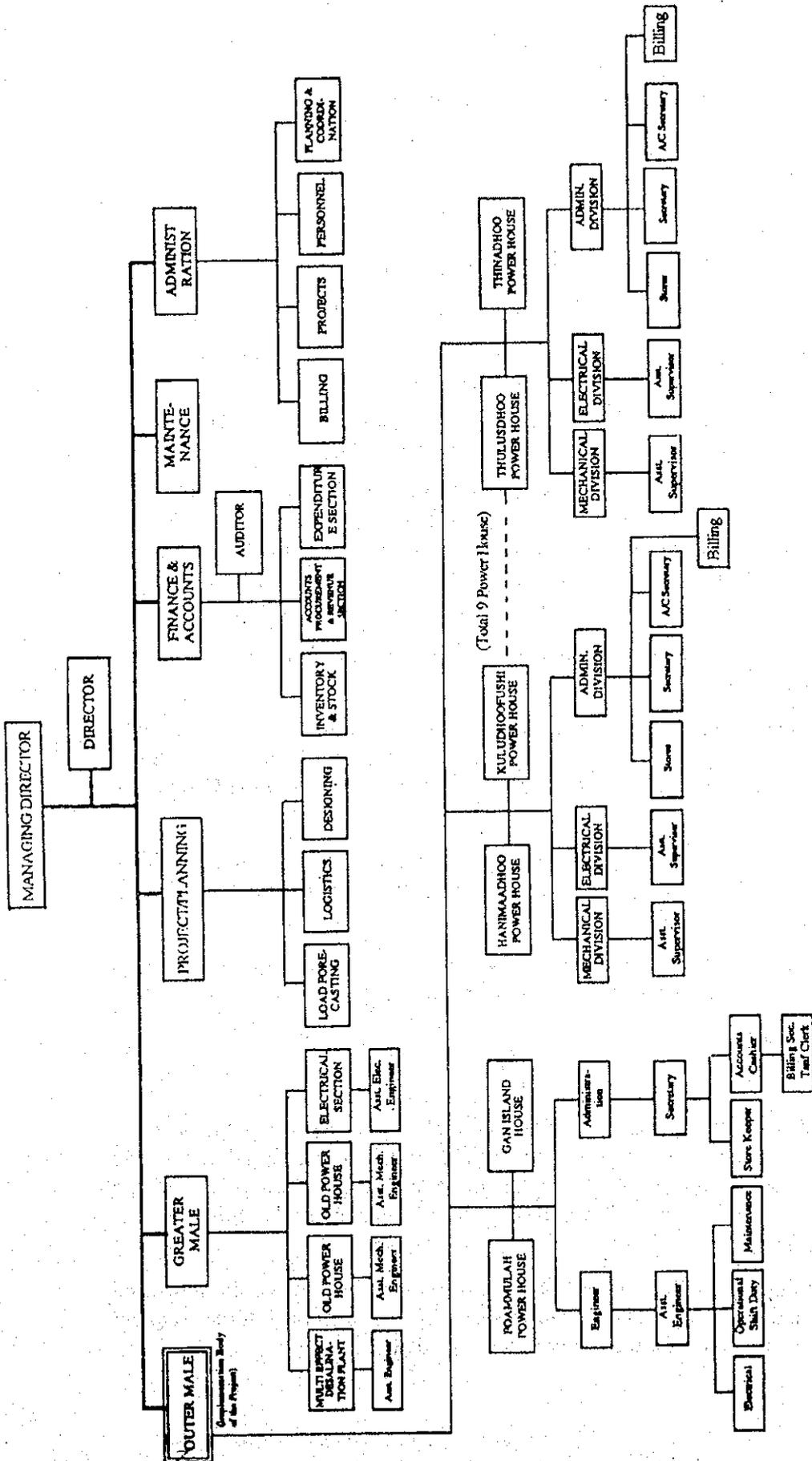
- (1) The Government of Maldives has understood the system of Japan's Grant Aid explained by the team, as described in ANNEX-III.
- (2) The Government of Maldives will take necessary measures, described in ANNEX-IV for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

7. Schedule of the Study

- (1) The Consultant will proceed to further studies in Maldives until August 30, 1995.
- (2) Based on the Minutes of Discussions and technical examination of the study results, JICA will prepare the draft final report in English and dispatch a mission to Maldives in order to explain its contents around the end of October, 1995.
- (3) In case that the contents of the draft final report are accepted in principle by the Government of Maldives, JICA will complete the final report and send it to the Government of Maldives by the end of February, 1996.

ANNEX- I Site Location Map





ANNEX-II Organization Chart of MEB

ANNEX-III

Japan's Grant Aid Scheme

1. Grant Aid Procedures

(1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

(2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

(1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project
- e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

(2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

- (3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- (4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- (5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

- (6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- 1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- 2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- 3) To secure buildings prior to the procurement in case the installation of the equipment.
- 4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- 5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- 6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

(9) Banking Arrangements (B/A)

- 1) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- 2) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

ANNEX-IV

Necessary measure to be taken by the Government of Maldives in case Japan's Grant Aid is extended are as follows;

- 1) To provide necessary data and information for the Project.
- 2) To secure and provide cleared, embanked and leveled land as well as access road for the project sites prior to the commencement of the construction by the Japanese side.
- 3) To ensure speedy unloading, tax exemption, custom clearance of the goods for the Project at the port and/or airport of disembarkation.
- 4) To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contracts such facilities as may be necessary for their entry into the Republic of Maldives and stay therein for the performance of their work.
- 5) To meet the charge of customs duties, internal taxes and other fiscal levies which may be imposed in the Republic of Maldives with respect to the supply of the products and services under the verified contracts.
- 6) To bear commissions to a Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.
- 7) To bear all the expenses, other than those to be born by the Grant Aid necessary for the execution of the Project.
- 8) To assign exclusive counterpart engineers and technicians to the Project in order to transfer the operation and maintenance technique for the Project and to witness and confirm construction when inspection is carried out.
- 9) To maintain and use properly and effectively the facilities constructed and equipment provided under the Japan's Grant Aid.
- 10) To install the equipment and materials supplied by the Japan's Grant Aid for power distribution networks in accordance with the design drawings prepared by the Japanese side and the proper implementation schedule to meet the requirements of the Japan's Grant Aid.
- 11) To procure and install the household panels and the street lightings as well as to construct an office building, in accordance with the proper implementation schedule to meet the requirements of the Japan's Grant Aid.
- 12) To take necessary measures for the prevention of the environmental pollution such as disposal of oil sludge, etc.

2. Explanation for the Draft Basic Design

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY
FOR
ATOLL ISLAND ELECTRIFICATION PROJECT(PHASE II)
IN
THE REPUBLIC OF MALDIVES
(CONSULTATION ON DRAFT REPORT)

In August 1995, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team for Atoll Island Electrification Project (Phase II) (hereinafter referred to as "the Project") to the Republic of Maldives, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft report of the study.

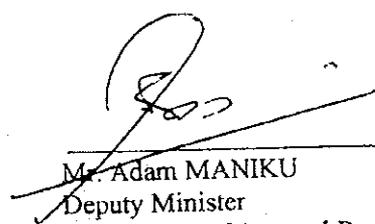
In order to explain and to consult the Maldivian side on the components of the draft report, JICA sent to Maldives a study team, which is headed by Mr. Hayao ADACHI, Development Specialist, Institute for International Cooperation, JICA, and is scheduled to stay in the country from October 25 to November 1, 1995.

As a result of discussion, both parties have confirmed the main items described on the attached sheets.

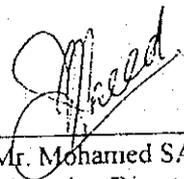
Male', October 31, 1995



Mr. Hayao ADACHI
Leader
Draft Report Explanation Team
JICA



Mr. Adam MANIKU
Deputy Minister
Department of External Resources
Ministry of Finance and Treasury
The Republic of Maldives



Mr. Mohamed SAEED
Managing Director
Maldives Electricity Board (MEB)

ATTACHMENT

1. Components of the Draft Report

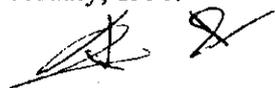
The Government of Maldives has agreed and accepted in principle the components of the Draft Report proposed by the team.

2. Japan's Grant Aid System

- (1) The Government of Maldives has understood the system of Japan's Grant Aid explained by the team, as described in **ANNEX-I**.
- (2) The Government of Maldives will take necessary measures, described in **ANNEX-II**, for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

3. Further schedule

The study team will make the Final Report in accordance with the confirmed items described in **ANNEX-III**, and send it to the Government of Maldives by the end of February, 1996.



ANNEX-I

Japan's Grant Aid Scheme

1. Grant Aid Procedures

- (1) Japan's Grant Aid Program is executed through the following procedures.
- | | |
|---------------------------------|----------------------------------------------------------------------------------|
| Application | (Request made by a recipient country) |
| Study | (Basic Design Study conducted by JICA) |
| Appraisal & Approval | (Appraisal by the Government of Japan and Approval by Cabinet) |
| Determination of Implementation | (The Notes exchanged between the Governments of Japan and the recipient country) |

- (2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

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- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project
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(2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

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However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- 1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- 2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- 3) To secure buildings prior to the procurement in case the installation of the equipment.
- 4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- 5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
- 6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

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The products purchased under the Grant Aid should not be re-exported from the recipient country.

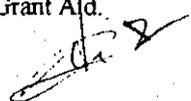
(9) Banking Arrangements (B/A)

- 1) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- 2) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

ANNEX-II

Necessary measure to be taken by the Government of Maldives in case Japan's Grant Aid is extended are as follows;

- 1) To provide necessary data and information for the Project.
- 2) To ensure speedy unloading, custom clearance of the goods for the Project at the port and/or airport of disembarkation.
- 3) To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract(s) such facilities as may be necessary for their entry into the Republic of Maldives and stay therein for the performance of their work.
- 4) To meet the charge of customs duties, internal taxes and other fiscal levies which may be imposed in the Republic of Maldives with respect to the supply of the products and services under the verified contracts.
- 5) To bear commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.
- 6) To bear all the expenses, other than those to be borne by the Grant Aid necessary for the execution of the Project.
- 7) To assign exclusive counterpart engineers and technicians to the Project in order to transfer the operation and maintenance technique for the Project and to witness and confirm construction when inspection is carried out.
- 8) To maintain and use properly and effectively the facilities constructed and equipment provided under the Japan's Grant Aid..
- 9) To provide public electricity to the peoples of the subject islands by MEB.
- 10) To secure and provide cleared, embanked and leveled land as well as access road for the project site prior to the commencement of the construction by the Japanese side and to construct incidental outdoor facilities, boundary fence(s) and entrance gate(s) by the completion of the power station at Hulhudhoo/Meedhoo island.
- 11) To install the equipment and materials supplied by the Japan's Grant Aid for power distribution networks in accordance with the design drawings prepared by the Japanese side and to complete installation works within three(3) months after delivery of such equipment and materials to Hithadhoo island.
- 12) To install the equipment and materials supplied by the Japan's Grant Aid for power distribution networks in accordance with the design drawings prepared by the Japanese side and to complete installation works by the one month before the starting of the test operation of DEGs in Hulhudhoo/Meedhoo island.
- 13) To install household panels including grounding system and street lightings necessary for the Project in accordance with the proper implementation schedule to meet the requirements of the Japan's Grant Aid.



- 14) To construct an office building including building services at Hulhudhoo /Meedhoo power station in accordance with the proper implementation schedule to meet the requirements of the Japan's Grant Aid.
- 15) To construct a power house and it's auxiliary building(s) including necessary equipment foundations at MEB's Hithadhoo power station and to relocate the generating facilities including their auxiliaries from private companies before the implementation of the Japan's Grant Aid.
- 16) To procure and to install a fuel supply system and electrical equipment including a step-up transformer necessary for Hithadhoo power station before the implementation of the Japan's Grant Aid.
- 17) To utilize properly the existing generating facilities in Hulhudhoo/Meedhoo Island to another Island's electrification by the Government of Maldives.
- 18) To purchase necessary spare parts for the maintaining the equipment provided under the Project, by MEB's own budget, after two(2) years of the completion of the Project.
- 19) To take necessary measures for the prevention of the environmental pollution such as disposal of oil sludge, etc.
- 20) To take necessary measures for improvement of the tariff system in order to maintain the sustainable operation of the power stations at both islands.

ANNEX-III

- 1) The Maldivian side requests that branch cables for normal households at Hulhudhoo/Meedhoo will be included in the first phase construction, because it is more effective that the installation works of branch cables for social/public facilities and private households will be carried out simultaneously. The team replied to be discussed with officials concerned in Japan.
- 2) Oil filters for De-oiler system will be clean-up type instead of consumable type which applied on Phase-I Project.
- 3) The Maldivian side requests that water collection tanks for well and rain water will be made by concrete instead of FRP because of less possibility of water leakage.
- 4) In order to ease the cleaning of the air filters, engines, radiators etc, the Maldivian side requested to provide ^{an} air compressor instead of a high speed cut-off machine.
- 5) The Maldivian side desired to procure Japanese diesel engine generators(DEG) for the Project because of the quality and the maintenance system of such DEG in Maldives.
- 6) Due to the difficulties of fuel oil transportation system from Gan island to Hithadhoo island, the Maldivian side requested to procure a oil tank lorry(6 m³). However, the team suggested the Maldivian side to maintain the oil transportation system as presently planned.
- 7) The Maldivian side requests to provide street lightings for the Project. The team explained its difficulties.
- 8) In order to collect the correct tariff from consumers, the Maldivian side requests to provide a calibration equipment for watt hour meters. The team replied to be discussed with officials concerned in Japan.

