

[資 料]

1. 調査団員・氏名

(1) 基本設計調査（第一次）

担当分野	氏名／所属先
総括	千頭 聡 JICA 国際協力専門員
海洋養殖開発計画	勝山 潔志 水産庁資源管理部国際課海外漁業協力室長
計画管理	丸尾 信 JICA 農村開発部乾燥畑作地帯第二課
業務主任/運営維持管理計画	藤木 暢 オーバーシーズ・アグロフィッシュリーズ・ コンサルタンツ株式会社株式会社
海洋養殖調査/環境社会配慮	土居 正典 インテムコンサルティング株式会社

(2) 基本設計調査（第二次）

担当分野	氏名／所属先
総括	千頭 聡 JICA 国際協力専門員
海洋養殖開発計画	岡 雅一 独立行政法人 水産総合研究センター 研究開発コーディネータ
計画管理	仲宗根 邦宏 JICA 農村開発部 水田地帯グループ 水田地帯第二課 主査
業務主任/運営維持管理計画	藤木 暢 オーバーシーズ・アグロフィッシュリーズ・ コンサルタンツ株式会社株式会社
建築・設備設計	立木 亨 オーバーシーズ・アグロフィッシュリーズ・ コンサルタンツ株式会社株式会社
取水施設設計/自然条件調査	小林 嘉昭 芙蓉海洋開発株式会社
施工計画/積算	潮田 利喜雄 オーバーシーズ・アグロフィッシュリーズ・ コンサルタンツ株式会社株式会社
機材計画/調達計画/積算	渡辺 真砂夫 芙蓉海洋開発株式会社
海洋養殖調査/環境社会配慮	土居 正典 インテムコンサルティング株式会社

(3) 基本設計概要説明調査

担当分野	氏名／所属先
総括/計画管理	仲宗根 邦宏 JICA 農村開発部 水田地帯グループ 水田地帯第二課 主査
業務主任/運営維持管理計画	藤木 暢 オーバーシーズ・アグロフィッシャリーズ・ コンサルタンツ株式会社株式会社
建築・設備設計	立木 亨 オーバーシーズ・アグロフィッシャリーズ・ コンサルタンツ株式会社株式会社

2. 調査行程

(1) 基本設計調査（第一次）

日	月日	曜日	JICA 団員	業務主任／運営維持管理計画	海洋養殖調査／環境社会配慮
1	10/2	木	東京→プノンペン	東京→プノンペン	東京→プノンペン
2	10/3	金	JICA 事務所打ち合わせ 水産局表敬協議、IC/R 説明	JICA 事務所打ち合わせ 水産局表敬協議、IC/R 説明	JICA 事務所打ち合わせ 水産局表敬協議、IC/R 説明
3	10/4	土	サイト調査	サイト調査	シアヌークビル養殖調査
4	10/5	日	海洋養殖現況調査	海洋養殖現況調査	シアヌークビル養殖調査
5	10/6	月	水産局協議	水産局協議	流通調査（プノンペン）
6	10/7	火	水産局協議	水産局協議	水産局協議・確認 流通調査（プノンペン）
7	10/8	水	ミニッツ署名 大使館報告	ミニッツ署名 大使館報告	流通調査（プノンペン）
8	10/9	木	JICA 事務所報告、 プノンペン→	水産局協議（国立養殖場調査）	流通調査（シアヌークビル） シアヌークビル養殖調査
9	10/10	金	東京	カンポット養殖調査	シアヌークビル養殖調査 カンポット養殖調査
10	10/11	土		ココン養殖調査	カンポット養殖調査
11	10/12	日		ココン養殖調査	ココン養殖調査
12	10/13	月		ケップ養殖調査	ケップ養殖調査
13	10/14	火		水産局協議	水産局協議、プノンペン→
14	10/15	水		水産局協議	東京
15	10/16	木		水産局協議	
16	10/17	金		水産局協議	
17	10/18	土		再委託先選定準備	
18	10/19	日		再委託先選定準備、資料整理	
19	10/20	月		水産局協議、	
20	10/21	火		水産局協議、JICA 事務所報告 プノンペン→	
21	10/22	水		東京	

(2) 基本設計調査 (第二次)

日	月日	曜日	調査日程 (JICA 団員・コンサルタント)		
			JICA 団員・コンサルタント①	コンサルタント②④⑥	コンサルタント③⑤
1	12/2	火	東京→プノンペン		
2	12/3	水	JICA 事務所表敬、水産局表敬・協議		
3	12/4	木	①シアヌークビルへ移動 ①シアヌークビル環境局協議	②④⑥シアヌークビルへ移動 ②建築事情調査 (サイト調査) ④施工事情調査 (サイト調査) ⑥シアヌークビル環境局協議	③⑤シアヌークビルへ移動 ③海水取水・自然条件サイト調査 ⑤機材調達事情 (サイト調査)
4	12/5	金	①周辺開発計画調査、ベースライン調査	②建築事情調査 (サイト調査) ④施工事情調査 (サイト調査) ⑥社会環境調査 (サイト調査)	③海水取水・自然条件サイト調査 ⑤機材調達事情 (サイト調査)
5	12/6	土	①②③④⑤⑥サイト周辺養殖漁家訪問、養殖状況の確認		
6	12/7	日	①②④⑥プノンペンへ移動		③資料整理 ⑤プノンペンへ移動
7	12/8	月	①水産局協議 (インフラ、環境配慮等)、環境省協議 EIA の再確認等	②建築計画 (法規関連調査) ④施工計画 (建築資材調査) ⑥社会環境調査 (環境省 EIA)	③海水取水・自然条件サイト調査 ⑤機材調達事情 (プノンペン)
8	12/9	火	①水産局協議 (組織運営計画・体制等)	②建築計画 (法規関連調査) ④施工計画 (建築資材調査) ⑥社会環境調査 (水産局)	③海水取水・自然条件サイト調査 ⑤機材状況調査 (IFReDI)
9	12/10	水	①水産局協議 (施設運営計画・体制等)、国立農業大学訪問	②建築計画 (構造関連調査) ④施工計画 (建築資材調査) ⑥社会環境調査 (住民移転関連)	③海水取水・自然条件サイト調査 ⑤機材状況調査
10	12/11	木	①水産局協議 (養殖技術開発計画・体制等)、パティ淡水養殖センター訪問	②建築計画 (パティ淡水養殖センタ) ④施工計画 (パティ淡水養殖センタ) ⑥社会環境調査 (NGO)	③海水取水・自然条件 (サイト調査) ⑤機材状況調査 (パティ淡水養殖センター)
11	12/12	金	①水産局協議 (養殖技術開発計画・体制等)	②建築計画 (水産局協議) ④施工計画 (建築資材調査) ⑥社会環境調査 (水産局協議)	③海水取水・自然条件サイト調査 ⑤機材調達事情 (プノンペン)
12	12/13	土	①資料整理	②④資料整理 ⑥シアヌークビルへ移動	③海水取水・自然条件サイト調査 ⑤シアヌークビルへ移動
13	12/14	日	資料整理、団内会議		
14	12/15	月	①水産局協議 (普及啓蒙活動計画・体制等)	②建築計画 (インフラ調査) ④施工計画 (建築工法調査) ⑥社会環境調査 (SH ミューティング準備支援)	③海水取水・自然条件サイト調査 ⑤機材調査 (シアヌークビル水質検査センター)
15	12/16	火	①水産局協議 (要請施設・機材等)	②建築計画 (インフラ調査) ④施工計画 (建築工法調査) ⑥社会環境調査 (SH ミューティング支援)	③海水取水・自然条件サイト調査 ⑤機材調査 (シアヌークビル水質検査センター)
16	12/17	水	①水産局協議 (ソフコン)、	②建築計画 (法規関連調査) ④施工計画 (建築資材調査) ⑥社会環境調査 (シアヌークビル水産局協議)	③海水取水・自然条件 (サイト調査) ⑤機材調査 (サイト調査)
17	12/18	木	官団員: 1045 東京発 (TG641/TG698) →1915 プノンペン着	②建築計画 (法規関連調査) ④施工計画 (建築資材調査) ⑥社会環境サイト補足調査	③海水取水・自然条件 (サイト調査) ⑤機材調査 (サイト調査)
18	12/19	金	JICA 事務所打ち合わせ、大使館表敬 水産局表敬協議①	②建築計画 (法規関連調査) ④施工計画 (建築資材調査) ⑥社会環境サイト補足調査	③海水取水・自然条件 (サイト調査) ⑤機材調達調査 (サイト調査)
19	12/20	土	プノンペン→シアヌークビル サイト視察	②④シアヌークビルへ移動 ②④⑥官団員に同行	③海水取水・自然条件 (サイト調査) ⑤機材調査 (サイト調査)
20	12/21	日	シアヌークビル→プノンペン	団内会議	
21	12/22	月	水産局ミニッツ案協議②	③海水取水・自然条件 (サイト調査) ⑤機材調査 (サイト補足調査)	
22	12/23	火	ミニッツ案協議③	③海水取水・自然条件 (サイト調査) ⑤機材調査 (サイト補足調査)	
23	12/24	水	ミニッツ署名	③⑤プノンペンへ移動	
24	12/25	木	大使館報告、JICA 報告、プノンペン発→		
25	12/26	金	→東京着		

①業務主任/運営維持管理計画、②建築・設備設計、③取水施設設計/自然条件調査、④施工計画/積算、⑤機材計画/調達計画/積算 ⑥海洋養殖調査/環境社会配慮、 *下線部 : シアヌークビルでの調査

(3) 基本設計概要説明調査

日	月日	曜日	JICA 団員	コンサルタント団員①②	宿泊
1	4/25	土		1100 東京 (JL717/TG698) →1925 プノンペン着	
2	4/26	日	1100 東京発 (TG641/TG698) →1925 プノンペン着	事前準備、補足調査 (積算関連)	プノンペン
3	4/27	月	水産局表敬協議, JICA 事務所打ち 合わせ、大使館表敬	同左	プノンペン
4	4/28	火	水産局表敬協議 ミニッツ署名	同左	プノンペン
5	4/29	水	大使館報告、JICA 報告 2025 プノンペン (TG699/TG642) →	大使館報告、JICA 報告 補足調査 (積算関連)	プノンペン
6	4/30	木	帰国	補足調査 (積算関連)	プノンペン
7	5/1	金		補足調査 (積算関連)	プノンペン
8	5/2	土		プノンペン→シアヌークビル、プ ロジェクトサイト状況補足調査	シアヌークビル
9	5/3	日		プロジェクトサイト状況補足調査	シアヌークビル
10	5/4	月		プロジェクトサイト補足調査 (環 境社会関連)	シアヌークビル
11	5/5	火		プロジェクトサイト補足調査 (環 境社会関連)、シアヌークビル→プ ノンペン	プノンペン
12	5/6	水		補足調査 (積算関連)	プノンペン
13	5/7	木		JICA 事務所報告、水産局報告、2025 プノンペン発 (TG699/JL718)	機中泊
14	5/8	金		帰国	

コンサルタント団員：①業務主任/運営維持管理計画、②建築・設備設計

3. 関係者（面談者）リスト

農林水産省

H. E. San Vanty Under Secretary of State

農林水産省・水産局

H. E. Nao Thuok General Directorate

Mr. Sam Nuov Deputy Director General

Mr. Ing Try Deputy Director General

Mr. Oum Dokun Deputy Director

Dr. So Nam Director, Marine Aquaculture Development Center

Mr. Haing Leap Deputy Director, Aquaculture Division

Mr. Pich Sereywath Deputy Director, Aquaculture Division

農林水産省・水産局・内水面養殖研究開発院

Dr. Chea Tharith Deputy Director, IFRaDI

農林水産省・水産局・種苗生産センター

Mr. Ngan Heng Director, Bati Fish Seed Production and Research Center

農林水産省・水産局・シアヌークビル支局（海洋養殖開発センター）

Mr. Yos Chanthana Deputy Director Marine Aquaculture Development Center

Mr. Yi Boros Deputy Director Marine Aquaculture Development Center

農林水産省・水産局・コンボンソム支局

Mr. Prak Sarawatt Deputy Director, Cantonment Kompong som

Mr. Nen Chamroun Deputy Director, Cantonment Kompong som

Mr. Khin Sarauuta Fishery Office Cantonment Kampong som

Mr. Keila Samrith Fishery Office Cantonment Kampong som

農林水産省・水産局・ココン支局

Mr. Lang Kirg Director, Koh Kong Province Fishery Office

Mr. Doeur Dully Fishery Officer Koh Kong Province

Mr. Tau Thearith Fishery Officer Koh Kong Province

Mr. Ith Seang Sovimol Fishery Officer Koh Kong Province

農林水産省・水産局・カンポット支局

Mr. Sar Sorin Director, Cantonment Kampot

4 協議議事録

4-1 基本設計調査 (第一次)

MINUTES OF DISCUSSIONS
ON BASIC DESIGN STUDY I
ON THE PROJECT
FOR CONSTRUCTION OF MARINE AQUACULTURE DEVELOPMENT CENTER
IN KINGDOM OF CAMBODIA



Based on the results of the Preliminary Study and supplementary information provided by Kingdom of Cambodia (hereinafter referred to as "Cambodia"), the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of Marine Aquaculture Development Center (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Cambodia the Basic Design Study Team I (hereinafter referred to as "the Team"), which is headed by Mr. Satoshi Chikami, Senior Advisor, JICA, and is scheduled to stay in Cambodia from 2nd to 21st October 2008.

The Team held discussions with the officials concerned of the Royal Government of Cambodia and conducted a field survey at the study area.

As a result of discussions and field survey, both parties confirmed the main items described on the attached sheets.

Phnom Penh, 8th October, 2008

 Satoshi Chikami	 Nao Thuok
Leader Basic Design Study Team Japan International Cooperation Agency	Director General Fisheries Administration Ministry of Agriculture, Forestry and Fisheries

ATTACHMENT

1. Objective of the Project

The objective of the Project is to develop marine aquaculture in Cambodia through development of basic technology on marine aquaculture, supply of seeds of marine aquaculture, and provision of education, technical training, and consultation opportunities to private marine aquaculture farmers and other related stakeholders.

2. Project site

The site of the Project is in Sihanoukville, south-west of Cambodia as shown in ANNEX-I.

3. Responsible and Implementing Agency

3.1. The Responsible Agency is the Ministry of Agriculture, Forestry and Fisheries.

3.2. The Implementing Agency is the Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries.

4. Items Requested by the Royal Government of Cambodia

After discussion with the Team, the Royal Government of Cambodia requested items as components to be included in the Project (hereinafter referred to as "the Project Components") and eliminate some items from the original request as described in ANNEX-II. Further discussion on the Project Components will be done in Basic Design Study II.

5. Japan's Grant Aid Scheme

The Cambodian side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Royal Government of Cambodia as explained by the Team and described on the Minutes of Discussions signed by the Preliminary Study Team and the Royal Government of Cambodia on 12th July, 2007. The Team explained that there would be some changes on the procedures of Japan's Grant Aid scheme and that the renewed procedures might be explained by the Basic Design Study Team II in December, 2008.

6. Schedule of the Study

6-1. The consultant members of the Team will conduct the study in Cambodia till 21st October, 2008. The Cambodian side agreed to assist the study conducted by the consultant members. 6-2. After going back to Japan, the Team will analyze the study result and appraise feasibility, sustainability and relevancy of the activity plan in Marine Aquaculture Development Center (hereinafter referred to as "MADeC") presented by the Cambodian side.

6-3. Basic Design Study Team II is planned to be dispatched in December, 2008, and further discussion and field survey will be conducted.

7. Other Items Discussed

7-1. The Project Components

The Team explained that the Project Components would be further discussed and analyzed by the following process.

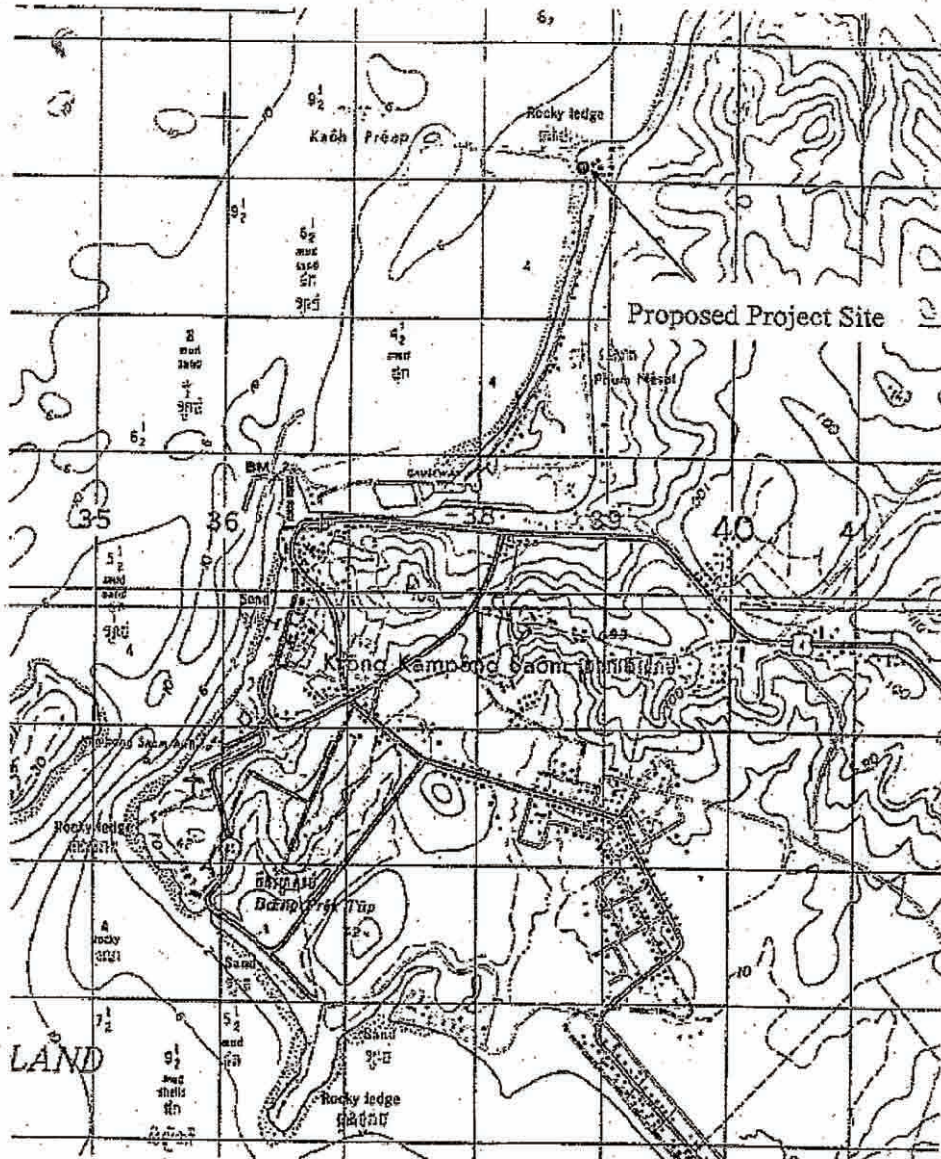
- (1) JICA will analyze data and information collected in this Study in Japan, and will appraise feasibility, relevancy and sustainability on the planned activities of MADeC.
- (2) Basic Design Study Team II will discuss with Cambodian side on the activities of MADeC based on the analysis made in Japan and confirm requests of Cambodian side on components of the Project.
- (3) JICA will assess the appropriateness of the request after further study and analysis.

Further, the Team addressed that the following matters should be considered for the planning of the Project component.

- (1) For securing sustainability of operation and management of MADeC, it is important to make collaboration with existing institutions in Cambodia such as the Inland Fisheries Research and Development Institute (IFReDI) and universities in the field of research and study on marine aquaculture development. In this regard, the facilities and equipment for MADeC should be designed to avoid unnecessary duplications of the roles of institutions concerned.
- (2) It is expected that MADeC be developed gradually over the years through various activities undertaken. In this respect, this Project will consider facilities and equipment indispensable for the activities of MADeC on the initial stage, although the layout plan should incorporate possibility of future expansion of facilities.

- ANNEX- I Location Map of the Project Site
ANNEX- II Items requested by the Royal Government of Cambodia

Location Map of the Project Site



b.c.

[Items requested by the Royal Government of Cambodia]

Administration Building

Brood Stock & Culture Facilities

Hatchery & Culture Building

Machine Building

Suction Pump House

Sea Water Reservoir Tank

Annex Buildings (Security guard house, Workshop)

Annex Facilities (Chlorella & other breeding tanks, Treatment tank, sedimental pond)

Training Equipment

Overhead projector, LCD projector, GPS, binocular, etc.

Laboratory equipment

Drying shelter, precision balance, glass ware, bathing water thermo, freezers, refrigerators, centrifuge, PCR thermo-cycle, binocular microscopes with photo-attachment, autoclave, incubators, clean bench, DO meter, water analysis kits, pH meter, etc.

Equipment for brood stock and breeding

3t live fish transportation boat, 2t pick-up truck with live fish tanks for seeds transportation, fork lift vehicle, wheelbarrow, high pressure washer, water pumps, balance, hose, aqualung set, fish net, small generator, FRP tanks, etc.

[Additionally requested items]

Dormitory for trainee

Mini bus

[Items eliminated from the original request]

Office Equipment and Furniture

Photocopies, fax machine, phones, filing cabinets, desks, chairs, shelves, television, digital camera, computers, hardware and software, internet system, color jet printers, etc.

MINUTES OF DISCUSSIONS
ON SECOND BASIC DESIGN STUDY
ON THE PROJECT
FOR CONSTRUCTION OF MARINE AQUACULTURE DEVELOPMENT CENTER
IN KINGDOM OF CAMBODIA

Based on the results of the Preliminary Study and supplementary information provided by Kingdom of Cambodia (hereinafter referred to as "Cambodia"), the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of Marine Aquaculture Development Center (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Cambodia the First Basic Design Study Team, which was headed by Mr. Satoshi Chikami, Senior Advisor, JICA, and stayed in the country from 2nd to 21st October 2008. Under certain viability confirmed through collected information by the Team and the discussions between both sides, JICA sent to Cambodia the Second Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Satoshi Chikami, Senior Advisor, JICA, and is scheduled to stay in the country from 2nd to 26th December 2008.

The Team held discussions with the officials concerned of the Royal Government of Cambodia (hereinafter referred to as "RGC") and conducted a field survey at the study area.

As a result of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Phnom Penh, 24th December, 2008



Satoshi Chikami
Leader
Basic Design Study Team
Japan International Cooperation Agency



Director General
Fisheries Administration
Ministry of Agriculture, Forestry and Fisheries

ATTACHMENT

1. Objective of the Project

The objective of the Project is to develop marine aquaculture in Cambodia through development of basic technology on marine aquaculture, supply of seeds of marine aquaculture, and provision of education, technical training, and consultation opportunities to private marine aquaculture farmers and other related stakeholders.

2. Project site

The site of the Project is in Sihanoukville, south-west of Cambodia as shown in ANNEX-I.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is the Ministry of Agriculture, Forestry and Fisheries.

3-2. The Implementing Agency is the Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries.

4. Items Requested by RGC

The Team discussed with Cambodian side on the planned activities of Marine Aquaculture Development Center (hereinafter referred to as "the Center") based on the analysis made in Japan.

After discussions, both sides agreed with the revised activity plan of the Center as shown in Annex—II.

The Team also confirmed on the appropriateness of requests of Cambodian side on components of the Project, the items described in Annex—III were finally requested from Cambodian side.

JICA will review the appropriateness of the requests and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

The Cambodian side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by RGC as explained by the Team and described on the Minutes of Discussions signed on the Preliminary Study on 12th July 2007 and the First Basic Design Study on 8th October 2008. The Team explained that there would be some changes on the procedures of Japan's Grant Aid scheme and that the renewed procedures might be explained by another Basic Design Study Team for explanation on the draft final report around the beginning May, 2009.

6. Schedule of the Study

6-1. JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents around the beginning May, 2009.



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6-2. In case that the contents of the draft final report is accepted in principle by RGC, JICA will complete the final report and send it to RGC by the end of June, 2009.

7. Other relevant issues

7-1. Operation and Maintenance

The Cambodian side will secure the necessary budget and personnel for implementation of the Project and for operation/ maintenance of the equipment and facilities, for which the Japanese side has been confirmed by RGC the following aspects:

- i) RGC is requested to provide appropriate annual budget of eighty thousand US dollars (US\$80,000) from the regular government budget to supplement the Center's operations and maintenance.
- ii) The Ministry of Agriculture, Forestry and Fisheries has already proclaimed the organizational setup and the personnel assignment to the Center.

7-2. Obligation of Cambodian Side for the Project

Both sides agreed that following matters were required to be executed by Cambodian side after the approval of the Project from Japanese government and prior to the commencement of the building work on the Project by Japanese side.

- i) to carry out land clearance and leveling,
- ii) to secure electricity supply to the site and telephone line,
- iii) to secure the water supply(water service) to the site,
- iv) to secure the area for seawater intake and discharged pipelines,
- v) to construct gate and fence around the site,
- vi) to relocate two families and their houses at the present entrance of the Center, and
- vii) to provide general office furniture and equipment of the Center

7-3. Stake holders' Meeting

The Cambodian side recognizes the importance of holding stakeholder meeting in order to inform the influence which will be caused by the construction of the Project.

The Cambodian side held an explanation session for the stakeholders on outline of the Project on 17th December, 2008 in collaboration with the Team. If necessary, the Cambodian side agreed to hold another explanation session for gaining better understanding and agreement on the Project and to send the result(s) to JICA.

7-4. Process of Environmental Impact Assessment (EIA)

①The Cambodian side explained the Team that IEE procedure has been completed and

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approved by the Ministry of Environment.

②The Cambodian side explained the Team that Environment Impact Assessment (EIA) is not required for the Project according to the laws and regulations in Cambodia.

7-5.Coordination with Other Development Plan

There are some development plans in Sihanoukville which might affect the Center development and operation. A delegation composed of both sides held a consultative meeting with the officers concerned of the Port Authority of Sihanoukville (PAS) on 19th December 2008. As a result, it is confirmed that PAS does not have any project or future plan that will affect operation of the Center. The Cambodian side agreed to have continued coordination with the related organizations.

- ANNEX-I Location Map of the Project Site
- ANNEX-II Marine Aquaculture Development Center activity plan revised in December 2008
- ANNEX-III Items requested by RGC

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