

MINUTES OF MEETING
ON
SCOPE OF WORK
FOR
THE AGRICULTURAL DEVELOPMENT STUDY
OF
THE MEKONG FLOODED AREA
IN
KINGDOM OF CAMBODIA

The Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr Yuji Sakamoto, visited The Kingdom of Cambodia from October 6th to 29th, 1995 for the purpose of discussing and confirming the Scope of Work for the Agricultural Development Study of the Mekong Flooded Area in Kingdom of Cambodia (hereinafter referred to as "the Study").

The Team had a series of discussions with the officers concerned of General Department of Agricultural Hydraulic and Hydro-Meteorology, Ministry of Agriculture, Forestry and Fisheries(hereinafter referred to as "GDH") and other organizations concerned. The list of participants in a series of meetings is attached in the Annex 1.

As a result of the discussions, GDH and the Team agreed on Scope of Work for the Study.

The following are the main issues discussed and agreed upon by both sides in relation to the Scope of Work for the Study.

1. The Team submitted the field report dated Oct. 25 '95 and both sides exchanged views on the basic concept of the study mentioned in paragraph 8 "Direction of the Study" in the report.

As a result of the discussion, Cambodian side accepted the basic concept of the study.

2. In order to smoothly conduct the study, both sides recognized necessity of

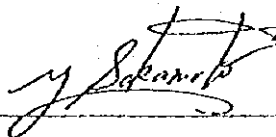
formulation of the steering committee as a coordination body of Cambodian side, the details and the member shall be decided upon arrival of Master Plan Study Team.

3. Cambodian side basically agreed upon Paragraph VII "UNDERTAKING OF RGC" in the Scope of Work, nevertheless Cambodian side commented that there might be difficulty in provision of sufficient facilities such as office equipment, vehicles and etc.
4. The Master Plan Study Team shall exclude a part of the study area from the study, wherever security problems arise.

Phnom Penh, October 26, 1995



HE Mr Chann Saphan
Under Secretary of State,
Ministry of Agriculture, Forestry and
Fisheries



Yuji Sakamoto
Leader,
Preparatory Study Team
Japan International Cooperation Agency

ANNEX 1

LIST OF PARTICIPANTS

Ministry of Agriculture, Forestry and Fisheries

HE Mr Chhann Saphan Under Secretary of State, MAFF
HE Mr Sin Niny Director General, MAFF and Permanent Secretary
of Cambodian National Mekong Committee
Ms Soy Bora International Cooperation Office, dept. Plan, MAFF

General Department of Agricultural Hydraulic and Hydro-Meteorology, MAFF

Mr Lim Kean Hor General Director, General Department of
Agricultural Hydraulic and Hydro-Meteorology,
MAFF
Mr Veng Sakhon Deputy Director General, General Department of
Agricultural Hydraulic and Hydro-Meteorology,
MAFF
Mr Bun Hean Design Office Chief, General Department of
Agricultural Hydraulic and Hydro-Meteorology,
MAFF
Mr Takashi Kawai JICA Expert

Department of Fisheries, MAFF

Mr Ouk Sim Deputy Director, Fisheries Department
Mr Phoekn Phean Vice Head of Open Water

Council for Development of Cambodia

Ms. Heng Sokun Coordinator of Japanese Assistance
Mr Tetsuro Hamada JICA Expert

Ministry of Environment

Ms. Hok Sovann Vice Director, Department of Planning

Ministry of Republic Work

Mr Phung Katry Director of Department of hydrology, Major Dam,
Ministry of Public Work

84 *YS*

Cambodian National Mekong Committee

Mr Sin Niny as mentioned above

Embassy of Japan

Mr. Shigemitsu Tsukamoto Second Secretary

JICA Cambodia Office

Mr Koji Sakane Staff

The Team

Mr Yuji Sakamoto Leader

Mr Akira Ara Member

Mr Hideaki Tanaka Member

Mr Takenobu Suzuki Member

Mr Kariyan Mei Member

Mr Mineo Kai Member

Mr Masaki Oga Member

JS 118

Oct. 25. 95

To: Mr. Lim Kean Hor
D. G. for DHHM
From: Yuji Sakamoto
JICA Team Leader

Dear Sir,

I would like to express my great thanks to you for the good arrangement and convenience provided by your staff that allow us to achieve useful findings through series of field trips.

I herewith submit for you, our field report which is expected to be used by both parties to conduct further discussion of the Study smoothly.

Field report

1 Field trip schedule (by Oga)

Oct. 19	Thu.	to Prek Kdain through G-A by vehicles
Oct. 20	Fri.	to Kandal Province and Neak Loeng by boat and vehicles
Oct. 21	Sat.	to Krang You, Saang by vehicles
Oct. 23	Mon.	to Kampong Cham, Chhlong, Kong Meas, Peam Chor, Angkor Borey, Kompong Speu by helicopter

2 Flood Hydrology (by Tanaka)

* The flood-retarding function of the inundated area should be studied. The study should include a retarding basin surrounded by a bank that will enhance the function of natural flooded area.

* Topographical survey is essential for the inundation analysis. Point elevation survey is preferred with one point per 1 km² desirably, or 5 km² at least. Detailed survey should be done for the boundary area of inundation.

3 Irrigation (by Tanaka)

* Rehabilitation of colmatage canals and gates is necessary. Redesigning of canals including "Pot Pot canals" should be done with much considerations on the

existing colmatage system. A motivation for a farmer's organization for O & M is preferably included in the rehabilitation study.

- * Separation of inundation from farmland by construction of a retarding basin should be studied, too, which aims at increasing in upland crop and double cropping in relatively dry areas surrounding the basin.

4 Farm activities (by Ara)

In order to increase agricultural productivity, it is necessary to consider the followings:

- * Examine the possibility to introduce double cropping aimed at improving the land use efficiency,
- * Introduction of high yield varieties, and the establishment of appropriate farming technology,
- * Introduction of high value vegetable crops.

5 Fisheries (by Mei)

Fisheries is an important element in inundation area, and it is closely linked with agricultural development. Future investigation on the following issue is required:

- * study the fisheries production system in inundated area, which maximize its output;
- * identify sources of conflicts between farmers and entrepreneur fishermen;
- * identify locations and mechanism of fishing lots in connection with colmatage canals;
- * propose solution and policy change in order to harmonize agriculture and fisheries development;

6 Socio-Economy (by Mei)

Farmer's association in the colmatage is considered necessary to assure sustainable development. However, at present, there is no such association. Studies are required to clarify the following:

- * social feature of farmers and fishermen involved in each canals;

- * source of social conflicts, i.e between farmers and fishermen, and between farmers using different water sources.
- * ways to organize farmers in association in order to maintain infrastructure;
- * solution to avoid conflict between farmers and fishermen, and to optimize agriculture and fisheries production;
- * organization and method to run the farmers' association.

7 Ecology (by Suzuki)

- * The study area covers some valuable areas including wetland which has been registered with Ramsar Convention. However, almost all are not yet investigated from the environment point of view. It is necessary to investigate the state of environment in M/P(Phase I).
- * Environmental investigations should be carried out in the study area considering the outline of project.
- * IEE(Initial Environmental Examination) will be carried out in M/P(Phase I) and the necessity of EIA(Environmental Impact Assessment) will be decided in the Phase I.

8 Direction of the Study (by Sakamoto)

Identified and recognized subjects for further study through series of field trips are;

- * to study inundation magnitude and the influences on the Mekong River system, but to keep flood as it is in the development planning for the time-being,
- * to promote and improve the existing farming practices such as colmatage and recession farming,
- * to find out the good solution of two sectors, agriculture and fisheries for the co-prosperity in the same project area,

- * to propose the establishment of agriculture supporting system such as extension services and farm credit,
- * to identify the priority area to be developed through land classification study.

Expected out put of the Study

Basic concept of the Study shall be the improvement of the existing farming practices under the present flood situation.

- * M/P study shall propose the short to medium term strategy of agriculture development in the study area, and also propose further study program for the medium to long term development strategy.
- * F/S shall be carried out in the selected area as a model for the agriculture development.

ANNEX 1 (環境)

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1	環境配慮実施の背景	A1
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1. 環境配慮実施の背景

環境配慮とは「開発プロジェクトにより著しい環境インパクトが生じるか否かを調査し、その結果を評価し、必要に応じ影響インパクトを回避または軽減するような対策を講ずることである」と定義される。

もし環境配慮が十分なされず開発プロジェクトが実施され、周辺の自然資源の管理に注意が払われなかった場合には、開発そのものの基盤が損なわれ、開発が維持できなくなるというケースが起こり得る。また、そのために住民の生活、生存の基盤が不当に脅かされるという事態を招く恐れも考えられる。従って、開発プロジェクトの実施に当たっては、相手国の立場に立って、周辺の自然資源、生活・生存基盤とのバランスのとれた開発が進められるよう、長期的視野を持って開発計画のできるだけ早い段階から十分な環境配慮の検討が行わなければならない。

本プロジェクトは、カンボディア国政府の意志決定により、カンボディア国の国土において行われることから、当国の環境配慮に関する法・指針・措置等を遵守する必要がある。しかし、カンボディア国においては制度が未整備であり、かつ一部整備された制度が必ずしも適切に運用されていない。環境配慮を行う場合には、前記認識を持ちながらもカンボディア国の政策、実施体制を勘案し、関係機関の問題意識を把握した上で、先方と十分な協議を重ねて行くといった柔軟な対応が必要である。

2. カンボディア国の環境

カンボディア国は陸地の60%を占める約1千万haに及ぶ大きな森林を有しており、森林開発及び森林保護の大きなポテンシャルをもっている。特に低地性森林や浸水森林における混成落葉樹林生態系はアジア大陸だけでなく世界的にも現存する最大のものである。

混成落葉樹林に生息する野性生物種の多様性は、近隣諸国と比しても特異なものである。約120種のほ乳類、約600種の鳥類、無数の両生類及び2,300種に及ぶ維管束植物が報告されている。混成落葉樹林は特にクープレー（*Bos sauveli* - 野生牛）の最後の生息地と言われている。最近では野生動物、特に大型動物が狩猟や地雷によって減少しつつある。

カンボディア国の森林は、1970年代と1980年代の伐採や最近の無計画な開発のため深刻な影響を受けている。FAOの試算（1991年）によれば、440万haが原生林、410万haが落葉樹林、180万haが過剰伐採された森林とされている。1960年代と1980年代の森林破壊の割合はそれぞれ50,000ha/年及び100,000ha/年と報告されている。カンダール県、プレイベン県、タケオ県等を含むメコン川中・下流域の州においては、伐採のため薪の不足現象が発生している。特に国の南東地域では完全に森林が消滅した地域も報告されている。

浸水森林の破壊は淡水魚の産卵場及び成育場の破壊につながり大きな問題となってい

る。1992年にUNDPが発表したトンレサップ湖の環境破壊に対する停戦(ceasefire)要請やカンボディア政府の諸対策にも拘わらず、森林破壊は現在まだ続いている状況である。UNDPは82万米ドルを投入してFAOと協同で森林の管理、開発技術の高揚のためのプロジェクト(Establishment of Forestry Resources Inventory Process in Cambodia)を1995年12月から実施の予定である。

カンボディア国の環境を特徴づけるのは、魚種の多さである。特にトンレサップ湖の魚類が注目される。トンレサップ湖では、乾期と雨期では湖の水際が約40kmも移動する状況で、その浸水森林がメコン川産の魚類の重要な産卵場所となり仔稚魚の育成場所となっている。この現象は同様な条件が発生するメコン川下流域(調査対象地域を含む)でも見られる。カンボディア国の淡水魚相については、1985年のフランスによるリスト(47科215種)があるのみである。1992年のわずか5日間の日本人専門家による魚類調査によっても、トンレサップ湖で新たに9種が確認されたように、これまでの魚類相調査は貧弱であるといえる。ワシントン条約で規制された種としては、トンレサップ湖の*Probarbus jullieni*(コイ目コイ科:セブンストライプトバルブ) *Pangasianodon gigas*(ナマズ目シルベ科)が報告されている。

IUCN(国家自然保護連合)で発表している絶滅の危機に瀕している動物リスト(IUCN-Red List of Threatened Animals,1994)によれば、カンボディア国に生息する動物種でリストアップされた種は、以下のようになっている。

(E)Endangered	15種
(V)Vulnerable	19種
(R)Rare	8種
(I)Indeterminate	6種
(K)Insufficiently known	13種

3. 環境行政

カンボディア政府は経済開発の中で環境への配慮が重要な要素であることを認識し、1993年に環境省を設立した。環境法は1994年2月にUNDPの支援の下に起案されたが、1995年10月現在、審議中で1996年の本格調査時点でも審議続行中の可能性が高い。起案によれば、法律は前文と本文からなり、前文においては、環境保護に関するカンボディア政府の姿勢を示し、法の目的、目標及び行政側の対処方針を述べている。本文においては法の名称、定義、設置すべき組織等について記述している。

また、環境影響評価に係わるガイドライン及び環境基準は現在制定されていない。環境法が成立した後これらのドラフト作成に入る予定とされている。過去に環境影響評価を実

施した経験はない。国としての保護動物、貴重種は決定されていない。マングローブ林は海岸地域にあるが、近々マングローブ林伐採禁止例を出す予定である。沿岸には珊瑚礁が存在する。水質の分析は機器の不足のため環境省内ではできない状況である。現在21の県に環境省の現地事務所を設置する計画があり、職員の教育を検討中である。このように環境行政体系は整備途上の状況であり、本格調査においてはJICAのガイドラインにしたがって調査が実施されることが望ましい。

カンボディア国においては、1993年にシハヌーク国王によって署名発効された23カ所の環境保護地区（図-A 1 (P.103) 参照）があるが、その内で現在保護活動が行われているのは、1. Kiriron 2. Phnom Bokor 3. Kep 4. Reamの4カ所の国立公園のみである。調査対象地域には該当するものはない。

4. 環境関連機関

カンボディア国の環境情報に関係する機関としては、同国の環境省、UNDPの環境担当部所及びNGOを統括する組織であるCCC(Cooperation Committee for Cambodia) 環境分科会等がある。カンボディア国の環境省の組織は図-A 2 (P.104) に示すように、大臣が統率し、次官及び3人の上級職によって、4つの局が運営されている。本プロジェクトは環境計画、水管理及び土地利用を統括する局の担当となる。

5. NGOの活動

現在カンボディアで活躍しているNGOは約200団体といわれている。1995年時点で、調査対象地域を含む5州で振興中のNGOプロジェクトの総数は428プロジェクトである。本プロジェクトに関係あると思われる3分野においては、次に示すように農業分野で26プロジェクト、地域社会開発分野で56プロジェクト、水文分野で12プロジェクトが進行中である。

県	農業分野	地域社会開発分野	水文分野	(プロジェクト総数)
PHNOM PENH	6	18	5	186
KRATIE	-	3	1	16
KOMPONG CHAM	1	2	-	69
KANDAL	10	15	-	71
TAKEO	4	14	3	52
PREY VENG	5	4	3	34
(計)	(26)	(56)	(12)	((428))

6. プロジェクト概要及び立地環境

要請案件に係るスクリーニング及びスコーピング作業の基礎資料とするため作成したプロジェクト概要を表-A1に、プロジェクト立地環境を表-A2、A3に示した。

7. スクリーニング及びスコーピング

現地で得られた情報に基づいて、要請案件の初期環境調査や環境影響評価など、本格調査における環境配慮の対応を検討するため、事前調査団とC/Pである水利局及び環境省の間で現地スクリーニング及びスコーピングを行った。スクリーニング結果を表-A4、A5に、スコーピング結果を表-A6、A7に示す。

8. 現地再委託

環境現況調査を現地再委託とする。現地調査は環境省の指導のもとで行われる。見積及びその内訳は次のとおり。

環境現況調査を現地再委託とする。現地調査は環境省の指導のもとで行われる。見積その内訳を以下にします。

Kingdom of Cambodia Nation Religion King

Ministry of Environment

48, Samdach preah Sihanouk, Tonle Basac, Chancamon, Phnom Penh, Cambodia
Fax & Phone : 855 2327811

The expenditure of the project for research on the fish feeding and the protection of wildlife in the provinces

This project is divided into two stages.

I. The first stage (5 months) :

It is called " the research and the data - collection ". In this stage is sub-divided into four main points

a- office- equipment :sub-total = 7,000.00\$

- Computer (1 set)
- Camara (1d set) and box for keeping document.
- Desks (4) and box for keeping document.
- Chairs (10)
- Radio cassette (1 set)
- Long- table for discussion (1)
- Pens, PAPERS, BOOKSetc
- Others (eg: the copy of documentetc)

b- Transportationsub-total= 6,000.00\$

- Racing motorcycle (2 sets)
- Oil and gas
- Others (eg: An accident by chance and motor is wrong)

c- Per Diem and Accommodationsub-total = 10,500.00\$

- Per diem (60 days for 5 persons)
- Allowance (7 persons)
- Hotel (3 rooms for 5 persons)
- Others (an accident by chance)

d- Training of researcherssub-total = 400.00\$

- English training (6 month)

II. The second stage (1 month) :

It is called " Making the Books ". This stage is Sub divided into 3 main points:

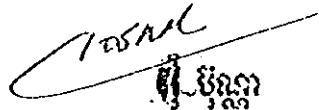
a- Paper and others (rent of making books)sub-total = 500.00\$

b- Allowancesub-total = 840.00\$

c- Transportation, connection and others sub-total = 800.00\$

The amount total(I and II) = 26,040. 00 \$

Thank you
Director of plan



**The expenditure project for research on
the fish feeding and the protection of wildlife in provinces**

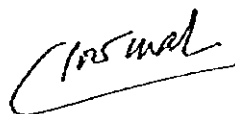
No	Description	Expenditure			Terms	Others
		Quantity	Unit price	Amount		
1	2	3	4	5	6	7
	1. Paid for researching and data collecting				05 months	
1.	Office equipment					
	- Computer	01 set	2,200 \$	2,200 \$		
	- Camera	01 pcs	300 \$	300 \$		
	- Closet for keeping document	02 closets	150 \$	300 \$		
	- desks	05 desks	300 \$	1,500 \$		
	- Chairs	10 chairs	50 \$	500 \$		
	- Walkman	01 pcs	150 \$	150 \$		
	- Long table for discussing	01 table	350 \$	350 \$		
	- Pens	50 pens	2.00\$	100 \$		
	- Photocopy paper	20 pcs	5.00\$	100 \$		
	- Writing paper	10 pcs	2.00\$	20 \$		
	- Books	21 books	5.00\$	105 \$		
	- Correction pens	08 pens	1.50\$	12 \$		
	- Highlighters	08 pcs	1.50 \$	12 \$		
	- Rulers	10 rulers	1.50 \$	15 \$		
	- Calculators	04 pcs	20 \$	80 \$		
	- pencils	14 pencils	1.00 \$	14 \$		
	- Staplers	07 pcs	2.00 \$	14 \$		
	- Paper clips and pins	10 boxes	1.00 \$	10 \$		
	- Colour film	04 pcs	3.00 \$	12 \$		
	- Whiteboard	01 pcs	50 \$	50 \$		
	- Pens (whiteboard)	16 pens	1.00 \$	16 \$		
	- Drinking water	40 pcs	10 \$	400 \$		
	- Glasses	24 glasses	0.50 \$	12 \$		
	- Document file	200 pcs	0.20 \$	40 \$		
	- Paper holder	10 pcs	4.00 \$	40 \$		
	- Hold puncher	03 pcs	5.00 \$	15 \$		
	- Gum arabic	10 bottles	0.50 \$	5.00\$		
	- Other (Copy of document)	-	-	628 \$		
	Total 1	-		7,000 \$		
2.	Transportation					
	- Racing motorbike	02 motors	2,500 \$	5,000 \$		
	- Motor oil	120 l	3.00\$	360 \$		
	- Gasoline	600 l	0.50\$	300 \$		
	- Other (motor is wrong					

)			340 \$	
	Total 2			<u>6,000 \$</u>	
3.	Per diem and accommodation				
	- Per diem	05 persons	15 \$	4,500 \$	
	- Allowance	07 persons	5,00 \$	2,100 \$	60 days
	- Hotel	03 rooms	20 \$	3,600 \$	60 days
	- Other (an accident by chance)	-	-	300 \$	60 days
	Total 3			<u>10,500 \$</u>	
4.	Training of reseachers				
	- English training	07 persons	10 \$/ month	<u>420 \$</u>	06 months
	Total I			<u>23,920 \$</u>	
	II. Paid for making books				01 month
1.	Paper and other (rent of making books)	-	-	500 \$	
2.	Allowance	07 persons	150 \$/ month	1,050 \$	
3.	Transportation, connection and other	-	-	590 \$	
	Total II			<u>2,140 \$</u>	01 month
	Total I + II			<u>26,060 \$</u>	

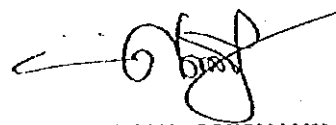
Phnom Penh, October 23rd, 1995

Director of plan

Projecting maker



MR. UM BUNNA



MRS. CHOU SORPIANY

表-A1 プロジェクト概要(PD)

1. プロジェクト名

メコン河環境適応型農業開発計画調査

2. プロジェクト要約の背景及び目的

カンボディア国南部5県(Gratie, Kompong Cham, Prey Veng, Kandal, Takeo)に位置するメコン河による洪水地域約60万ha(農家個数約20万戸)において農業開発計画策定に係るMVP及び選定された優先地区におけるモデル農業開発計画に係るFISを実施する

3. プロジェクトの概要

a 事業実施地域の概要	カンボディア国南部5県(Gratie, Kompong Cham, Prey Veng, Kandal, Takeo)に位置するメコン川流域は雨季には河川堤防地域を除いて殆ど洪水する。
b 受益人口及び受益面積	約20万戸(約240万人)、約60万ha
c 事業の内容	コルマタージュのリハビリ及び新規構築事業、農業及び農村インフラ整備、農業開発計画
d 実施機関	農林水産省所属の農業水利局
e 環境関係機関	環境省、農業水利局

4. プロジェクトのコンポーネントと計画

(1) (ア)の主要コンポーネント(開発行為)	(2) プロジェクトの形態		(3) 計画規模		(4) 備考
	新規開発	改修事業	面積等	主要構造物の規模	
a 灌漑			ha		未定
b 排水			ha		未定
c 農地造成			ha		無
d 干拓			ha		無
e 圃場整備			ha		未定
f 入植			ha		未定
g ダム築造			(貯水池面積) ヶ所 ha	(貯水量) m ³	無
h 作農転換				作物	未定
i その他					無

表-A2 プロジェクト立地環境 (SD) -1/2

1 プロジェクト名

メコン河環境適応型農業開発計画調査

2 プロジェクト対象地域の社会立地条件

a 土地所有/利用形態	1989年に土地私有と相続が許可になる。土地利用は水田、畑、池等 土地は1人当たり幅2.5m長さ数百mに区分され、与えられている。
b 周辺の経済活動	ブノンペンと周辺の所得格差が増大しつつある。農村は電化されていない。
c 慣行制度 (水利権等)	水資源の保全等を水利局で管理、水利権は無い、漁業権は存在する。
d 地域住民	大半がクメール人の農民、少数の漁民、少数民族は居ない
e 公衆衛生	疫病、腸チフス、デング熱、
f 人口	約240万人
g その他	コルマタージュが特徴的、生活用水と農業用水の区別が無い

3 プロジェクト地域の自然立地条件

a 気象	年平均降雨量1320mm、雨期 (5-10月)、乾期 (11-4月)、 最高29度C、最低25度C
b 地形・地勢	地形の勾配1/30,000のメコン沖積平野、トンレサップ川、 バサック川、トングレットク川等がある。
c 水文・排水環境	メコン川 (流域約80万km ² 、最高34,000m ³ /s)、水位差7.9m、湿地・湖沼在り
d 土壌	メコン川浸水土壌、赤色土壌、砂質沖積土壌
e 植生	稲、ヨシ、落葉樹、常緑樹、浮草等
f 貴重な生物種・自然	貴重種はトンレサップ湖のコイ科とシルベ科の魚等、詳細は不明
g その他	雨期には対象地域の殆んどが冠水する。

表-A3 プロジェクト立地環境 (SD) -2/2

4 プロジェクト対象地域の特に留意すべき立地・環境条件の有無

特に留意すべき立地・環境条件	留意すべき立地・環境条件の有無					
	プロジェクト 地区内			プロジェクト 地区外		
	有	無	不明	有	無	不明
特別な地域指定***	*	*	*	*	*	*
S1 ワントン条約該当動植物の生息地			○	○		
S2 ラムサール条約該当湿地	○			○		
S3 国立公園・自然保護区		○		○		
S4 その他						
社会立地***	*	*	*	*	*	*
S5 先住民・少数民族居住地		○		○		
S6 史跡・文化遺産・景勝地のある地域		○		○		
S7 負の影響大なる経済活動がある地域	○			○		
S8 その他						
自然立地***	*	*	*	*	*	*
S9 乾燥・半乾燥地域 (パオ、レンゾラドを含む)		○			○	
S10 熱帯雨林・ワイルドランド		○			○	
S11 湿地・泥炭地	○			○		
S11.1 湿地	○			○		
S11.2 泥炭地			○	○		
S12 海浜・沿海部		○		○		
S12.1 マングローブ林帯		○		○		
S12.2 珊瑚礁		○		○		
S13 山岳地帯・急傾斜地・受蝕地・荒廃地			○	○		
S14 閉鎖水域 (湖沼・人造湖)	○			○		
S15 その他						

5 域内・周辺地域・類似地域での開発による環境への重大な影響事例等の特記事項：無

(3) スクリーニング・スコーピング

表-A4現地スクリーニング・チェックリスト (その1)

1 プロジェクト名 メコン河環境適応型農業開発計画調査

2 対象国名 カンボディア国

3 対象国の開発行為によるIEEまたはEIAの実施条件

開発行為	開発形態	IEEの実施条件	EIAの実施条件
かんがい	新規	ha以上	ha以上
	改修	ha以上	ha以上
排水	新規	ha以上	ha以上
農地造成	新規	ha以上	ha以上
干拓	新規	ha以上	ha以上
圃場整備	新規	ha以上	ha以上
入植	新規	ha以上	ha以上
ダム築造	新規	貯水面積 ha以上	貯水面積 ha以上
	改修	貯水面積 ha以上	貯水面積 ha以上
営農転換	新規	ha以上	ha以上
湿地開発	新規	ha以上	ha以上
その他		ha以上	ha以上

注) カンボディア国では、IEE及びEIAの実施は規定されていない。

4 特別な地域指定の有無

	プロジェクト地区内	プロジェクト地区外 (周辺含む)
a ワシントン条約該当動植物	不明	有
b ラムサール条約該当湿地	有	有
c 国立公園・自然保護地域等	無	有
d その他		

表-A5 現地スクリーニング・チェックリスト (その2)

5 スクリーニング項目		環境要素小項目 (起こりうる環境影響の例)	評価結果 (現地調査の必要性)	備考 (根拠)
スクリーニング項目	環境大項目 (視点)			
I 社会環境	1 社会生活 関連住民の社会生活、 経済活動、交通、コミュニ ニティ、制度・慣習等 の既存の社会生活に悪 影響を及ぼさないか？	<ul style="list-style-type: none"> a 計画的な住民移転 b 非自発的な住民移転 c 生活様式の変化 d 住民間の風潮 e 経済活動の基幹移転 f 先住民・少数民族・遊牧民への悪影響 g 人口増加 h 経済活動の転換・失業 i 人口構成の急激な変化 j 所得格差の拡大 k 水利権・漁業権の再調整 l 既存制度・慣習の改革 m 組織化等の社会構成の変更 	有	スコピーング・チェックリスト を参照
	2 保健・衛生 関連住民の保健等に影 響を及ぼさないか？ 或いは水関連の疾病を 引き起こさないか？	<ul style="list-style-type: none"> a 医薬使用量の増加 b 風土病の発生 c 伝染病媒介の伝播 (往血吸虫、 マリチ・むねばら・フナギ等)の発病 d 残留毒性 (農薬等) の蓄積 e 廃棄物・排泄物の増加 	無	同上
	3 史跡・文化遺産・景観等 歴史的、考古学的、景 観的、科学的等の特有 な価値を有する地域あ るいは特別な社会的価 値のある地域かどうか？	<ul style="list-style-type: none"> a 史跡・文化遺産の損傷・破壊 b 貴重な景観の喪失 c 埋蔵資産への影響 	無	同上
II 自然環境	4 貴重な生物・生態系地域 貴重な生物、生態系を 有する地域かどうか？	<ul style="list-style-type: none"> a 種生変化 b 有害生物の侵入・繁殖 c 貴重種・固有動植物への影響 (貴重種か固有な動植物種の減少・絶滅) d 湿地・泥炭地の消滅 e 生物種の多様性 f 森林・ワイルドの消滅 g マングローブ林の破壊 h 重要種の破壊 	有	同上
	5 土壌・土地 土壌の荒廃、土壌侵食、 土壌汚染等を招かないか？	<ul style="list-style-type: none"> a 土壌侵食 b 土壌塩漬化 c 土壌肥力低下 d 土壌汚染 e 土地の荒廃 (砂漠化含む) f 後背地の荒廃 (林地・草地) g 地盤沈下 	無	同上
6 水質・水量等 河川・湖沼の表流水、 地下水あるいは大気中 悪影響を及ぼさないか？	<ul style="list-style-type: none"> a 表流水の状況変化 (水位) b 地下水の状況・水位変化 c 濁水・鉄水の発生 d 土砂の堆積 e 河床の低下 f 舟運への影響 g 水質の汚染・低下 h 富栄養化 i 濁水の侵入 j 水温の変化 k 大気汚染 	有	同上	
総合評価			現地調査が必要	

表A6現地スコーピング・チェックリスト（その1：社会環境）

- 1 該当する開発行為 かんがい、排水、圃場、入植、農地造成、干拓、ダム、営農転換
- 2 該当する開発形態： 新規、改修
- 3 該当する立地条件： 湿地・泥炭地、閉鎖水域・湖沼・沼・人造湖
 乾燥・半乾燥、熱帯雨林・ワイルドランド、海浜・沿岸部・マングローブ林・珊瑚礁、
 山岳・急傾斜地・侵食脆弱地

環境要素	環境インパクトの程度				判断の指標
	A	B	C	D	
1 社会環境					
1 住民生活					
1 計画的な住民移転				○	新規入植計画について不明
2 非自発的な住民移転			○		該当なし
3 生活様式の変化			○		該当なし
4 住民間の軋轢		○			水利用において農民と漁業者の軋轢
5 先住民・少数民族・遊牧民 への悪影響			○		該当なし
6 その他					
2 人口問題					
1 人口増加			○		該当なし
2 人口構成の急激な変化			○		該当なし
3 その他					
3 住民の経済活動					
1 経済活動の基盤移転				○	魚業等の経済活動の変化の有無が不明
2 経済活動の転換・失業			○		該当なし
3 所得較差の拡大				○	経済的弱者への影響が不明
4 その他					
4 制度・慣習					
1 水利権・漁業権の再調整		○			水利権漁業権への影響がある
2 組織化等の社会構成の変更		○			住民の組織化又は組織改造がある
3 既存制度・慣習の改革		○			開発に伴い新制度が導入される
4 その他					
5 保健・衛生					
1 農薬使用量の増加			○		該当なし
2 風土病の発生			○		該当なし
3 伝染病疾患の伝播（住血吸虫・マラリア・コレラ・フジリヤ等の疾病）			○		該当なし
4 残留毒性（農薬等）の蓄積			○		該当なし
5 廃棄物・排泄物の増加			○		該当なし
6 その他					
6 史跡・文化遺産・景観等					
1 史跡・文化遺産の損傷・破壊			○		該当なし
2 貴重な景観の喪失			○		該当なし
3 埋蔵資源への影響			○		該当なし
4 その他					

A：重大な影響がある C：重大な影響はない
 B：重大な影響があると考えられる D：不明、または重大な影響は無いと考えられる

表A7現地スコーピング・チェックリスト（その2：自然環境）

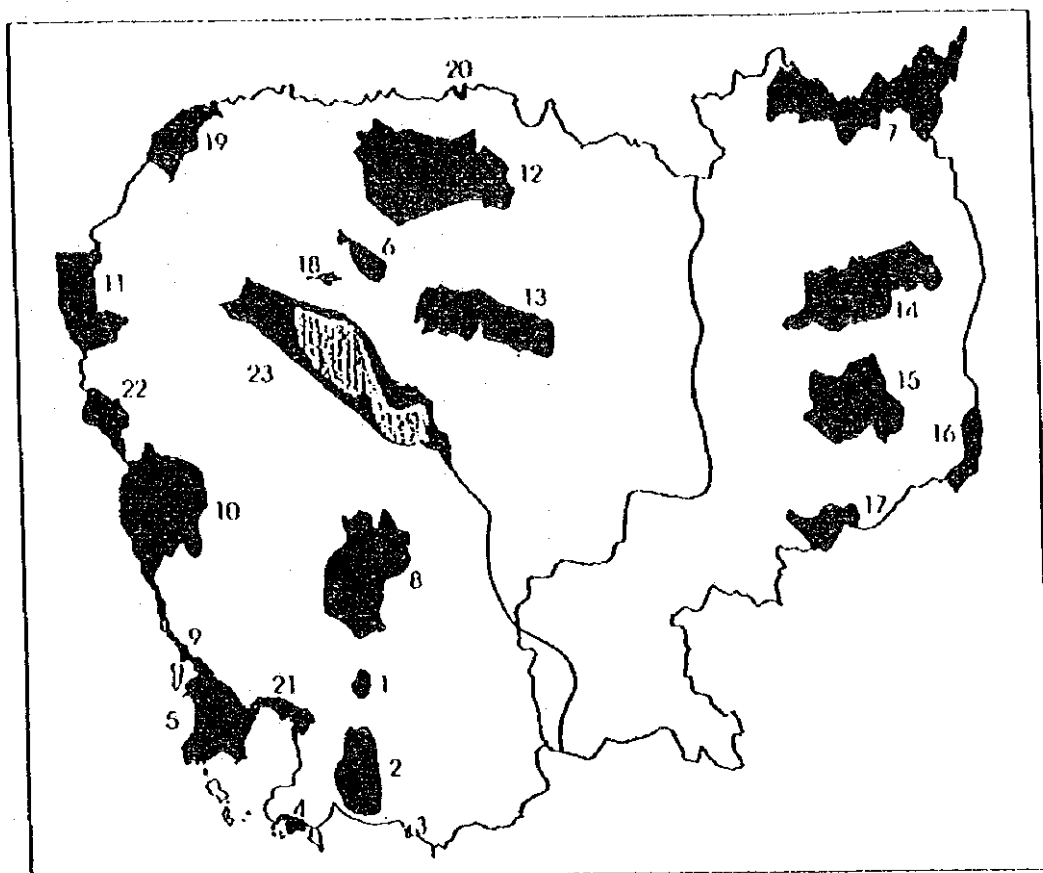
環境要素	環境インパクトの程度				判断の指標
	A	B	C	D	
II 自然環境					
1 貴重な生物・生態系地域					
1 植生変化		○			土地利用の変化がある
2 貴重種・固有動植物への影響 (貴重種か固有な動植物種の減少・絶滅)				○	対象地域の動植物が不明
3 生物種の多様性				○	対象地域の動植物が不明
4 有害生物の侵入・繁殖			○		該当無し
5 湿地・泥炭地の消滅				○	水文環境の変化による影響が不明
6 熱帯林・744'ランド'の消滅			○		該当無し
7 マングローブ林の破壊			○		該当無し
8 珊瑚礁の破壊			○		該当無し
9 その他					
2 土壌					
1 土壌浸食			○		該当無し
2 土壌塩類化			○		該当無し
3 土壌肥沃度の低下			○		該当無し
4 土壌汚染			○		該当無し
5 その他					
3 土地					
1 土地の荒廃(砂漠化含む)			○		該当無し
2 後背地の荒廃(林地・草地)			○		該当無し
3 地盤沈下			○		該当無し
4 その他					
4 水文					
1 表流水の流況変化(水位)		○			水路の改修で流況が変化する
2 地下水の流況・水位変化		○			水路の改修で地下浸透、水位変化がある
3 湛水・洪水の発生		○			下流域への影響が発生する可能性あり
4 土砂の堆積		○			多シルト質水の湛水時間変化による影響
5 河床の低下		○			流速等の変化による河床洗掘量の変化
6 舟運への影響			○		該当無し
7 その他		○			利用水量の変化によるグ・トナムへの影響
5 水質・水温					
1 水質の汚染・低下			○		該当無し
2 富栄養化			○		該当無し
3 塩水の侵入			○		該当無し
4 水温の変化			○		該当無し
5 その他					
6 大気					
1 大気汚染			○		該当無し
2 その他					

A: 重大な影響がある

B: 重大な影響があると考えられる

C: 重大な影響はない

D: 不明、または重大な影響は無いと考えられる



National Parks

- 1 Kirirom
- 2 Phnom Bokor
- 3 Kep
- 4 Ream
- 5 Botum-Sakor
- 6 Phnom Kulen
- 7 Virachey

Wildlife Sanctuaries

- 8 Aural
- 9 Peam Krasop
- 10 Phnom Samkos
- 11 Ronien Daun Sam
- 12 Kulen-Promtep
- 13 Beng Per
- 14 Lomphat
- 15 Phnom Prich
- 16 Phnom Nam Lyr
- 17 Snoul

Protected Landscapes

- 18 Angkor
- 19 Banteay Chmar
- 20 Preah Vihear

Multiple - Use Areas

- 21 Dong PENG
- 22 Samlaut
- 23 Tontle Sap

図-A1 保護地区の指定状況

-A14-

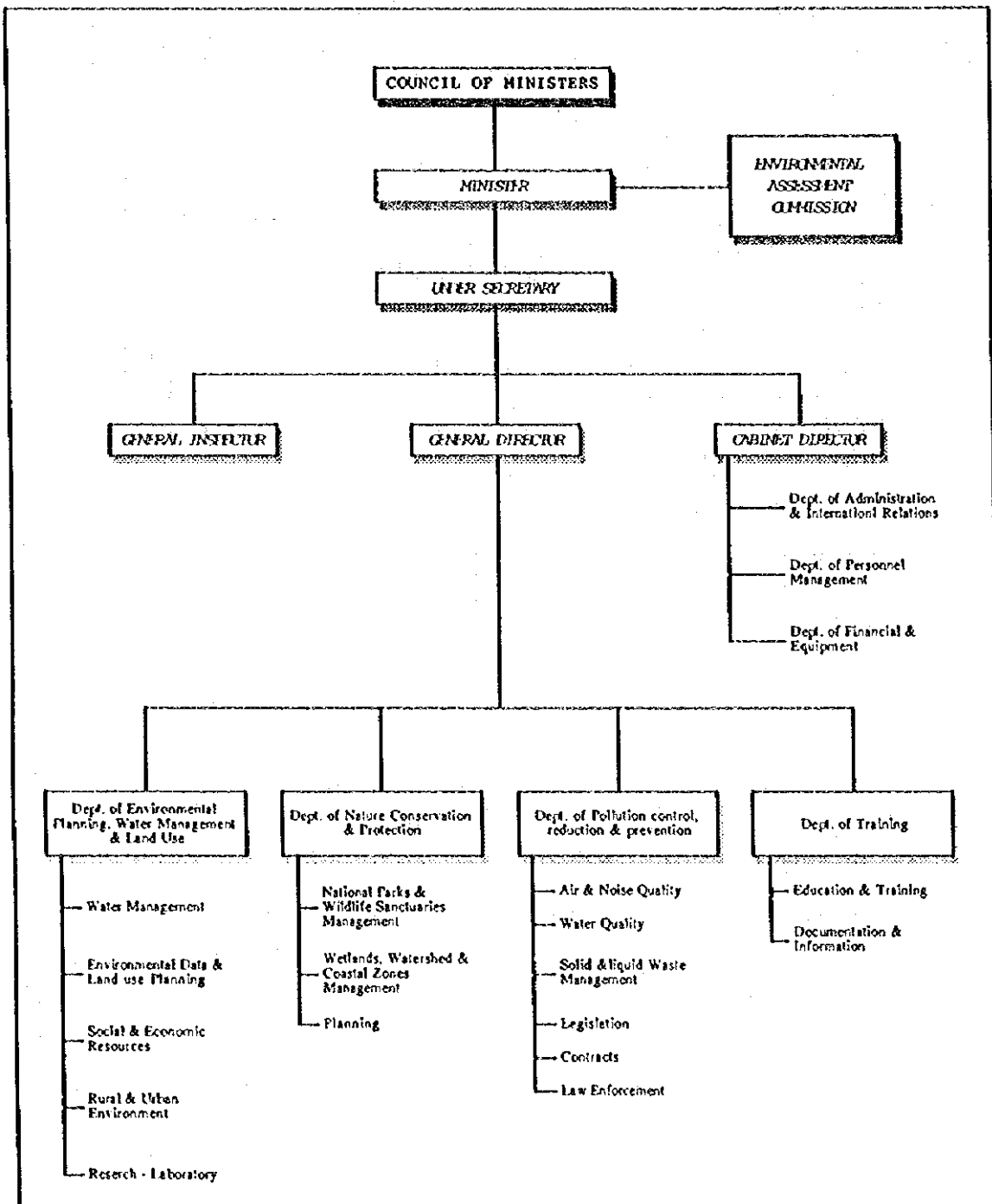


図-A 2 環境省の組織

(4) カンボディア政府
「メコン河環境適応型
農業開発計画」
調査要請書

APPLICATION FOR THE TECHNICAL COOPERATION
(DEVELOPMENT STUDY) BY THE GOVERNMENT OF JAPAN

AGRICULTURAL DEVELOPMENT STUDY
OF
THE MEKONG FLOODED AREA IN CAMBODIA

September 1994

Department of Agricultural Hydraulic and
Hydro-Meteorology
Ministry of Agriculture, Forestry and Fisheries

Kingdom of Cambodia

APPLICATION FOR THE
TECHNICAL COOPERATION (Development Study)
BY THE GOVERNMENT OF JAPAN

1 . Project digest

(1) Project Title
Agricultural Development Study of the Mekong Flooded Area in Cambodia

(2) Location (Please attach a location map)
The Mekong flooded areas in Kompong Cham, Kandal, Pcey Veng and Takeo provinces

(3) Implementing Agency
- Name of the Agency
Dept. of Agricultural Hydraulic and Hydro-Meteorology (DAHIM) and Dept of Agronomy,
Ministry of Agriculture, Forestry and Fisheries.
- Number of Staff of the Agency (on a category basis)
• 763 staff in DAHIM including 120 engineers, 186 technicians and others.
- Budget allocated to the Agency
• Project budget 300 M Riels (US\$ 120,000) in 1994, DAHIM
- Organization chart
(see attached sheet)

(4) Justification of the Project
- Present conditions of the sector

• The agriculture sector has been recognized as a top priority sector in the national reconstruction program, since the agricultural products, especially rice for consumption, have been the top earner of GDP. The productivity of the sector, on which about 85 % of the national population rely, is still low due to the insufficient rural infrastructure and agricultural production technology. Agriculture in Cambodia is dominated by rainfed paddy and upland cultivation. People made efforts to cope with water constraints applying supplementary and dry season irrigation, choosing early or recession periods of flood and inundation, colraatage, etc. Although irrigation development can greatly increase cropping intensity and agricultural production, a lack of capital accumulation has long limited the irrigated area.

Irrigation is one of the common technique in Cambodian delta, there people are combatting with, and adapting to the flood for farming and their living. Soils of the delta are fertile and therefore, natural levees are very densely populated including fishermen. The study to enhance production in the delta as well as sustain such production system, is, however, not enough.

- Sectoral development policy of the national / local government

• For the purpose of increasing productivity of agriculture and thus improving living standard of the rural people as well as reducing negative effects on environmental aspects, the Royal Government has put the

priority on improvement of the existing infrastructure such as irrigation, flood control and drainage facilities, rural roads in the sector development plan. With a view to effective realization of the sector's potential, improvement and strengthening is necessary in the access of farmers to agricultural inputs, such as fertilizers, pesticides, seeds and agricultural credit as well as in the delivery of basic support services, such as research and extension services.

- Problems to be solved in the sector

• The following problems are prevailing.

- a) Inadequate irrigation facilities built during 1975 - 78
- b) Shortage of agricultural inputs supply
- c) Shortage of agricultural technical staff with appropriate technology
- d) Inadequate institution and stations for agricultural research and extension works.

- Outline of the Project

• The Mekong flooded area is mainly located from Kompong Cham in Cambodia down to the border to Vietnam. The area flooded (mainly through many preks (tributary) and colmatage canals, not much by overtopping the levee, nowadays) is about 6,000 km² both banks along the Mekong and the Tonle Sap / Bassac. Another flooded area along the Tonle Sap / Great Lake due to its own runoff and the reversed flow from the Mekong during some June - September, totalling 7,000 km² in average year is mainly used for fisheries and navigation having a vast reserved forest area around the Great Lake for fish spawning. The flooded area along the Mekong / Bassac can be used for agriculture still involving many uncultivated wetlands. For this areas a comprehensive master plan study is proposed.

The soils in the flooded area comprise recent alluvials forming levees along the Mekong / Bassac and also alluvial deposits in depressions, river backswamps as well as in the flood plain of the Great Lake. These soils belong to the most fertile soil in Cambodia owing to flooding accompanied with silt sedimentation. Although utilization of the land is limited to the period of flood recession - dry season, the area forms a best production area of upland crops (levees and sandy islands) as well as a very productive dry season rice.

As a residential areas in these flooded areas, the housing has been limited to the top of levees along the Mekong / Bassac and some river banks of the tributaries. The population in these levees very high, and therefore, many villages are located along the river banks more than along the inland highways.

• Needs of the project study can be summarized as follows:

- 1) The Mekong flooded areas and its timing differ slightly every year, but the flood cycle is constant and a common pattern of adapting

people's living to the flood in certain subdivided regions exists . Such patterns should be studied for any purposes , since the flooding / sedimentation is considered not handicapped , rather advantageous maintaining land productivity .

2) Prevailing farming in the flooded area (recession period and dry season together with water utilization) is essentially the sustainable agriculture maintaining the soil fertility . Such agriculture should further be developed .

3) Development strategies may slightly differ following the flood adaption patterns in the sub - regions . In order to formulate each development model the flooded area can be divided into the following seven zones .

- (1) *Kg Chan downstream - best upland including islands*
- (2) *Muk Kampul - colmatage*
- (3) *Ponhia Lu - reservoirs / regulators*
- (4) *Wetland - use Boeng Veal Samnup , Cheung Laung , etc .*
- (5) *Mekong / Bassac - modern colmatage*
- (6) *Prey Veng , Mekong Leftbank - navigation / tidal irrigation*
- (7) *Takeo , Bassac Rightbank - colmatage and navigation / irrigation*

- Purpose (short - term objective) of the Project

A comprehensive development strategies intensifying sustainable agriculture in the Mekong flooded area are clarified through the proposed master plan study so that further steps such as FIS , DID , construction with priorities can proceed .

- Goal (long - term objective) of the Project

600,000 ha subject area can be maintained as sustainable agriculture lands applying the proposed strategies mentioned above .

- Prospective beneficiaries

Out of the study area , 600,000 ha , the existing paddy is about 190,000 ha and upland 90,000 ha . Those who are directly concerned with these productive areas would be some 200,000 families or about one million population . They would produce some 30 percent of the national paddy production equivalent .

- The Project's priority in the National Development Plan / Public Investment Program .

The priority of this development study in National Development Plan should be very high , since the high productivity of these areas and the sustainability of locally adapted technique such as colmatage and tidal irrigation have been noticed by the Government and need further verifications . From production point of view as well as environmental consideration , the study with the high priority in the National Development plan / public investment program would continue .

(5) Desirable or scheduled time of the commencement of the Project

April 1995

(6) Expected funding source and /or assistance (including external origin)

Grant Aid of the Government of Japan :

(7) Other relevant Project , if any

- M/P and F/S of Ponahia Lu integrated agriculture development project in the northern Phnom Penh was proposed by the MAFF for Technical Cooperation of the Japanese Government in June 1994 (under review in CDC) . The proposal can be considered part of the components of this master plan study (Zone 3) . Nearby the Zone 3 there is an urban plan along RM 26 as bypass of RNS to be formulated . However , the Zone 3 inundation area is not suitable for residential / industrial development . Zone 3 should only be used for a sustainable agriculture .

- An urgent rehabilitation of the seven existing colmatage systems along the Mekong rightbank was proposed by MAFF through CDC to the Japanese Government for its grant aid programme in July 1994 (Improvement and development of colmatage systems along the Mekong , Kandal , Cambodia) . This proposal covers part of Zone 5 . The whole schemes and development strategies of the Zone 5 are still to be made by the proposed master plan study together with the other zones .

The apparent requirement of the above rehabilitation can be concurrently carried out with the master plan study .

- UNDP / Mekong Secretariat financed " Irrigation Rehabilitation Study in Cambodia (April 1994) " included the following five pre-feasibility studies in the Mekong flooded area :

- Tamouk Reservoir Irrigation Project (TK) : Zone 3
- O Andoung Gate Irrigation Project (AI) : Zone 4
- Prek Tatam Irrigation Project (TR) : Zone 6
- Takeo River Irrigation Project (TR) : Zone 7
- Canal 03 Irrigation Project (C3) : Zone 7

These medium scale rehabilitation projects (commanding a few hundreds ha to five thousand ha) have been assessed to be feasible so that they can proceed to the next stage .

Through the proposed master plan study , this kind of project proposals may appear many , following the studied strategies . A more integrated , larger scale projects reflecting exact strategies may also be proposed .

2 . Terms of Reference of the proposed Study

(1) Necessity / Justification of the Study

As mentioned in " outline of the project " , the reasons required studies are as follows :

- The Mekong flooded area is important from the points of views of productive farm products and a dense population living on narrow levees .
- Prevailing land use systems should be re-assessed in view of sustainable agriculture and maintaining a reasonable environment .
- According to the flood / inundation patterns , the area can be classified into several zones , and for each zone further development / concervation plan and strategies may be established .

(2) Necessity / Justification of the Japanese Technical Cooperation

Japan has been successfully rendering to the Kingdom of Cambodia the technical and financial assistance in implementing several agricultural projects such as Agricultural Technical Center in Battambang , Animal Production Center in Kompong Cham , Maize Production Center in Day Eth and the Prek Thnot main dam (not complete) and diversion weir and left bank canal (co - financed arranged by the Mekong Committee) , since mid - 1960s . Through these projects , Japan has accumulated experiences and know - hows on the agricultural developments in the Kingdom of Cambodia . These accumulated experiences and know - hows combined with Japan's advanced technology in agricultural development will surely lead the Project to a success .

(3) Objectives of the Study

1. To clarify the usefulness of the Mekong flooded area with view to develop sustainable agriculture and to maintain / improve the environment for the population , identifying recommendable development plan and strategies for each sub-divided zones .

2. To perform a Feasibility Study for two selected areas , medium - large scale , identified through the Master Plan study .

3. The above studies are made taking into account the environmental improvement maintaining the land productivity . Throughout the activities of the study , technical transfer to the Cambodian counterpart personnel should also be carried out .

(4) Area to be covered by the Study

The Study Area covers approximately 6,000 km² as shown in the attached map .

(5) Scope of the Study

In order to achieve the above objectives, the Study will consist of two (2) phases and the following items :

1. Phase I (master plan study)

1.1 Collection and review of the existing reports, data and information on the following items, and field survey, if required, on the hydraulic conditions to be clarified.

(1) Natural conditions (topography, hydro-meteorology, geology, soil, etc.).

(2) Social condition (population, social organization, sanitation, employment, socio-economy, land tenure, etc.)

(3) Agriculture and livestock (farming practice, land use, cultivation and yield, extension for improving agriculture production, livestock raising and fisheries).

(4) Agricultural infrastructures (irrigation and drainage, farm roads, marketing facilities, agricultural extension facilities, etc.).

(5) Agro-economy (marketing, investment, productivity, finance, processing, farmers organizations, etc.).

(6) Social infrastructures (transportation, domestic water, social welfare etc.).

(7) Environmental aspects.

In this stage, field observations and interviews in the whole levees are to be made.

1.2 Evaluation of flood / inundation affections, available water and land resources for an sustainable agricultural development plan.

1.3 Review of the existing irrigation development plan and projects in the Study area.

1.4 Compilation of master plan for the Mekong flooded basin agricultural development plan which includes the following :

(1) Establishment of basic development plan and strategies for each zone.

(2) Establishment of water allocation plan including facilities operation plan among beneficiaries (mainly farmers and fishermen).

(3) Identification of the priority project taking into consideration the following components :

- Restructuring of existing agricultural infrastructures including water resources, and irrigation / drainage, flood mitigation.

- Agricultural development including improvement of farming techniques, agricultural extension and farmers' organization.

- Rural development including securing domestic water, transportation and rural living improvement.

- Others considered necessary.

2. Phase II (feasibility study)

2.1 Collection of data and information in the selected project areas through additional field survey.

- 2.2 Formulation of the agricultural development project in each selected project area .
- 2.3 Preparation of preliminary design of the main facilities .
- 2.4 Preparation of the project implementation plan .
- 2.5 Estimate of the Project costs and benefits .
- 2.6 Evaluation of the Project .
- 2.7 Recommendation.

(6) Study Schedule

Anticipated study period is 2 years in total consisting of phase I and phase II requiring each one year . Tentative schedule of field investigations and study in Japan is shown in attached chart .

(7) Expected Major Outputs of the Study

JICA will prepare and submit the following reports in English to Cambodia :

- 1. Inception Report
Twenty (20) copies at the commencement of the Phase I field work .
 - 2. Progress Report (1)
Twenty (20) copies at the end of the Phase I field work .
 - 3. Interim Report
Twenty (20) copies at the commencement of the Phase II field work .
 - 4. Progress report (2)
Twenty (20) copies at the end of the Phase II field work .
 - 5. Draft Final Report
Twenty (20) copies at the end of the Phase II home office work . The Cambodian side will provide its comments on the Draft Report to JICA within one (1) month after explanation meeting of the Draft Final Report .
 - 6. Final Report
Fifty (50) copies within two (2) months after the receipt of comments on the Draft Final Report .
- (8) Request of the Study to other donor agencies , if any
non
- (9) Other relevant information , if any
non

3 . Facilities and information for the Study Term , etc .

- (1) Assignment of counterpart personnel of the implementing agency for the Study (number , academic background , etc .)

Implementing agency : DAHHM
 Counterparts : Director or Vice Director 1
 Chief , Design Section 1
 Irrigation Engineer 4

(These are all university graduate and more than several years experience's)

Technicians / surveyers as required

Counterparts from other departments :

Agronomist , Forester , Fishery expert ,
 Environmentalist and Economist

- (2) Available data , information , documents , map et . related to the Study (Please attach the list .)

Name of documents / data	Available agency
• Cambodia National Mekong Committee (CNMC) : Wetland study in the lower Mekong basin (sweden financed)	CNMC
• UNDP / Mekong Secretariat : Irrigation Rehabilitation Study in Cambodia , Inventory and Pre- F / S reports (1994)	DAHHM
• FAO / ADB : Cambodia , Agricultural Development Options Review Phase I sector Review (1994)	FAO DAHHM

- (3) Information on the security conditions in the Study Area

There is no security problem in general .

4 . Global Issues (Environment , Women In Development Poverty , etc.)

- (1) Environmental components (such as pollution control , water supply , sewage environmental management , forestry , ect . , of the Project , if any frequent high floods of the Mekong latest years are said due to deforested watershed in addition to a global extreme climate cycle .

- (2) Anticipated environmental impacts (both natural and social) by the Project , if any
 The project study aims to maintain reasonable environment for man and land productivity , thus sustainable agriculture adapting it to the nature will enhance social stability too .

- (3) Women as main beneficiaries or not
 Women are equally important as men in the farmer's family .

- (4) Project components which requires special considerations for women (such as gender difference , women specific role , women's participation) if any
non
- (5) Anticipated impacts on women caused by the Project , if any
non
- (6) Poverty reduction components of the Project , if any
Sustainable farming in general gives higher production that affects reducing poverty .
- (7) Any constraints against the low - income people caused by the Project
non

5 . Undertakings of the Government of CAMBODIA

In order to facilitate a smooth and efficient conduct of the Study , the Government of CAMBODIA shall take necessary measures :

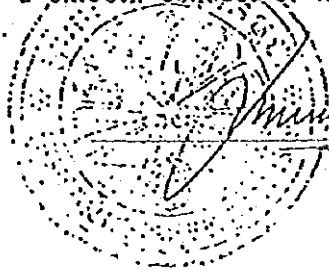
- (1) To secure the safety of the Study Team .
- (2) To arrange for quick and smooth customs clearance of the equipment and materials required for the project at free of any charge .
- (3) To exempt any taxes and duties imposed by the Government on the personal effects to be brought by the team members into Cambodia .
- (4) To exempt the Study Team from the payment of local income tax for the salaries and allowance , and to exempt from local security taxes , during the stay in Cambodia for the project .
- (5) To secure clearance of flight for aerial observation and use of airport related to the project .
- (6) To secure clearance for the use of communication facilities including transceiver with allocated frequency and electronic distance measuring instruments .
- (7) To secure clearance for taking necessary materials , especially maps , aerial photographs and necessary data for the project from Cambodia to Japan subject to the security regulation of the Government of Cambodia .

6 . The Government of CAMBODIA shall bear claims , if any arises against members of the Japanese Study Team resulting from , occurring in the course of , or otherwise connected with the discharge of their duties in the implementation of the Study , except when such claims arise from gross negligence or willful misconduct on the part of the member of the Study Team .

7 . Dept. AHHM shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non - governmental organization concerned for the smooth implementation of the Study .

The Government of CAMBODIA assured that the matters referred in this form will be ensured for a smooth conduct of the Development Study by the Japanese Study Team.

Signed



Kong Som Ol
KONG SOM OL

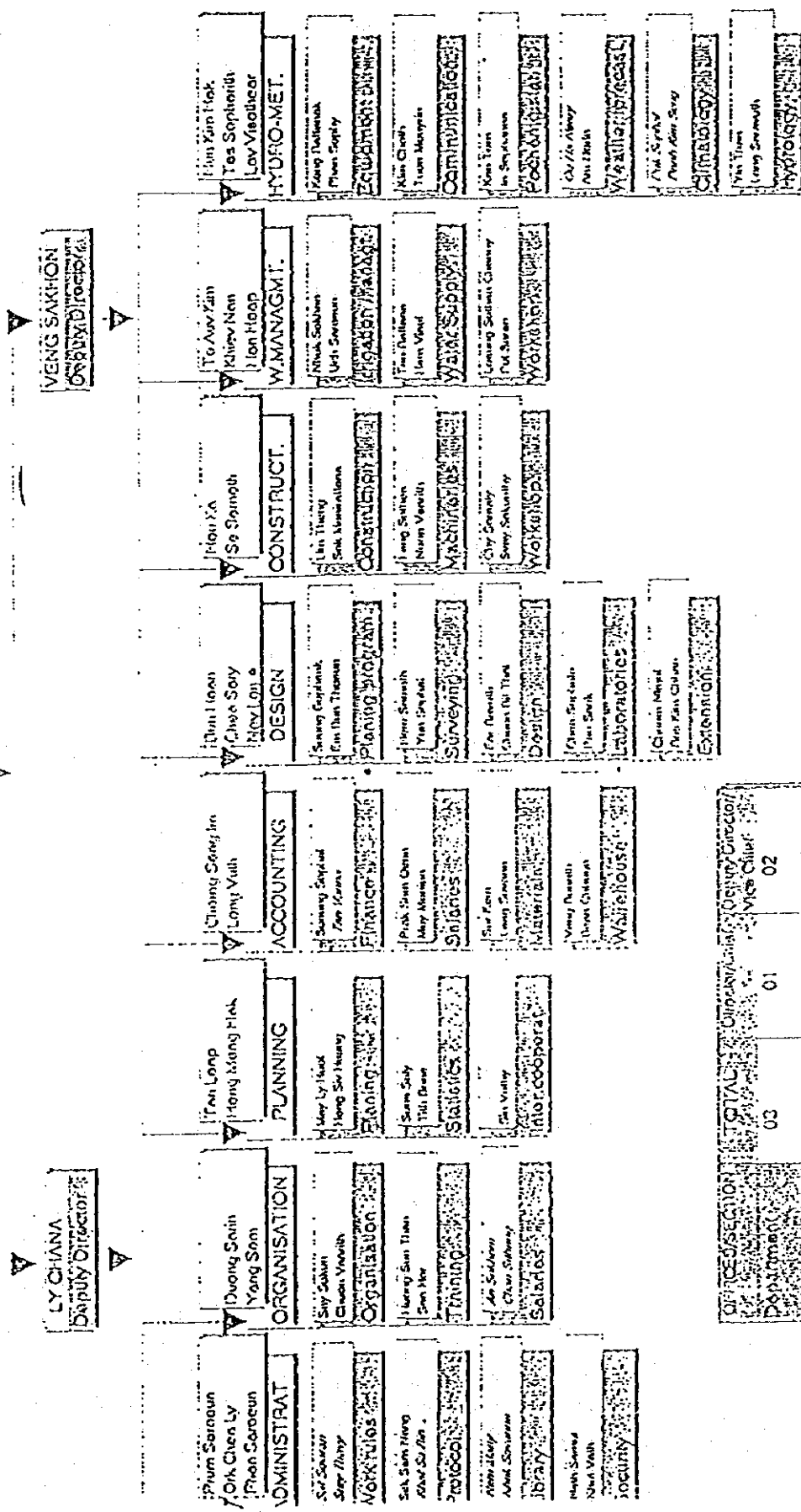
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On behalf of the Government of : Cambodia

Date : 26/9/94

ORGANISATION CHART OF THE CENTRAL AGRICULTURAL HYDRAULIC AND METEOROLOGICAL DEPARTMENT

LIM KEAN HOOR
DIRECTOR



OFFICE/SECTION	TOTAL	Deputy Director	Deputy Director
Department	03	01	02
Office	20	07	13
Section	59	29	30

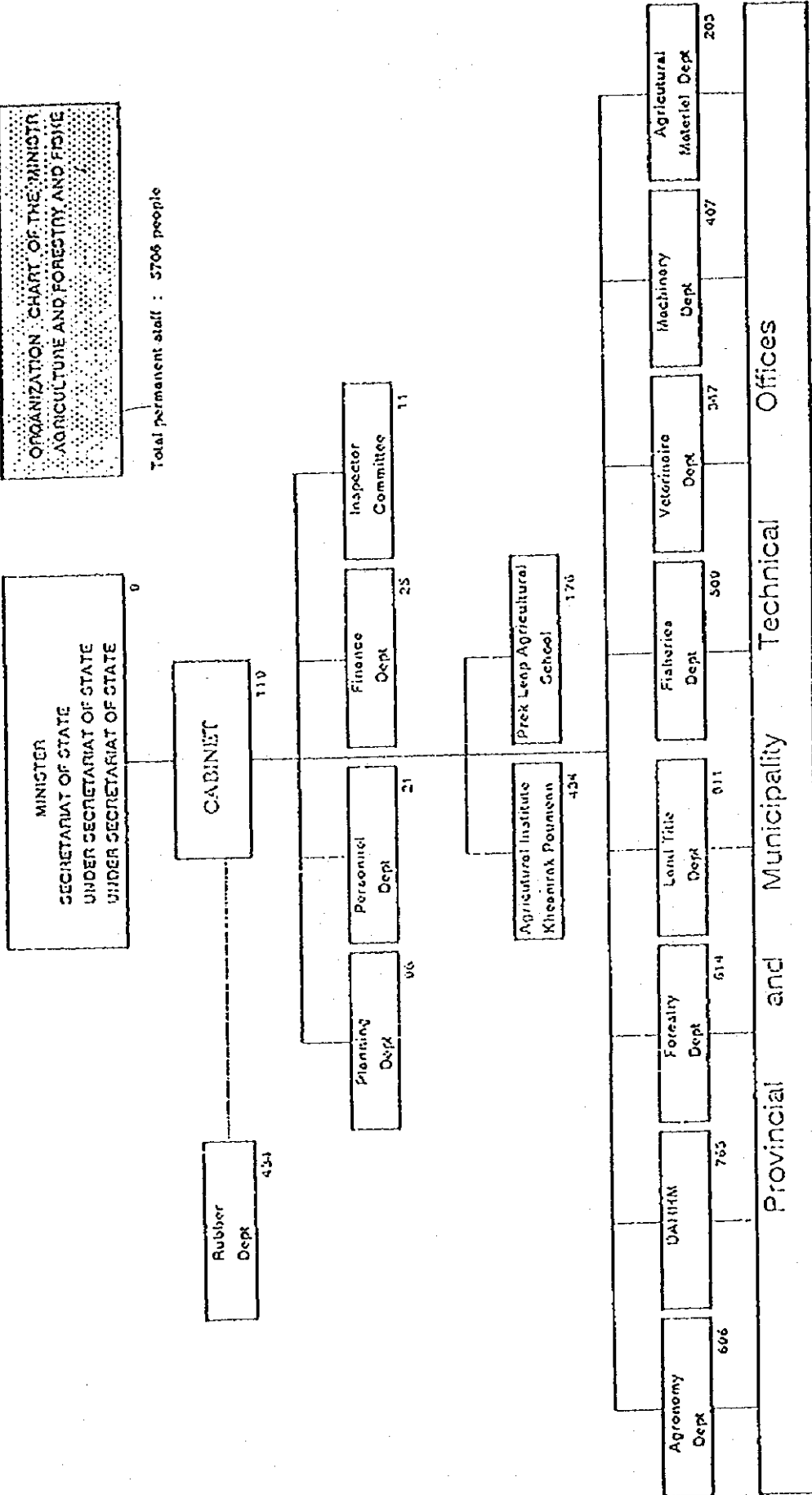
Names in ITALIC are women

STAFF IN AGRICULTURAL HYDRAULICS AND
HYDRO-METEOROLOGY DEPARTMENT

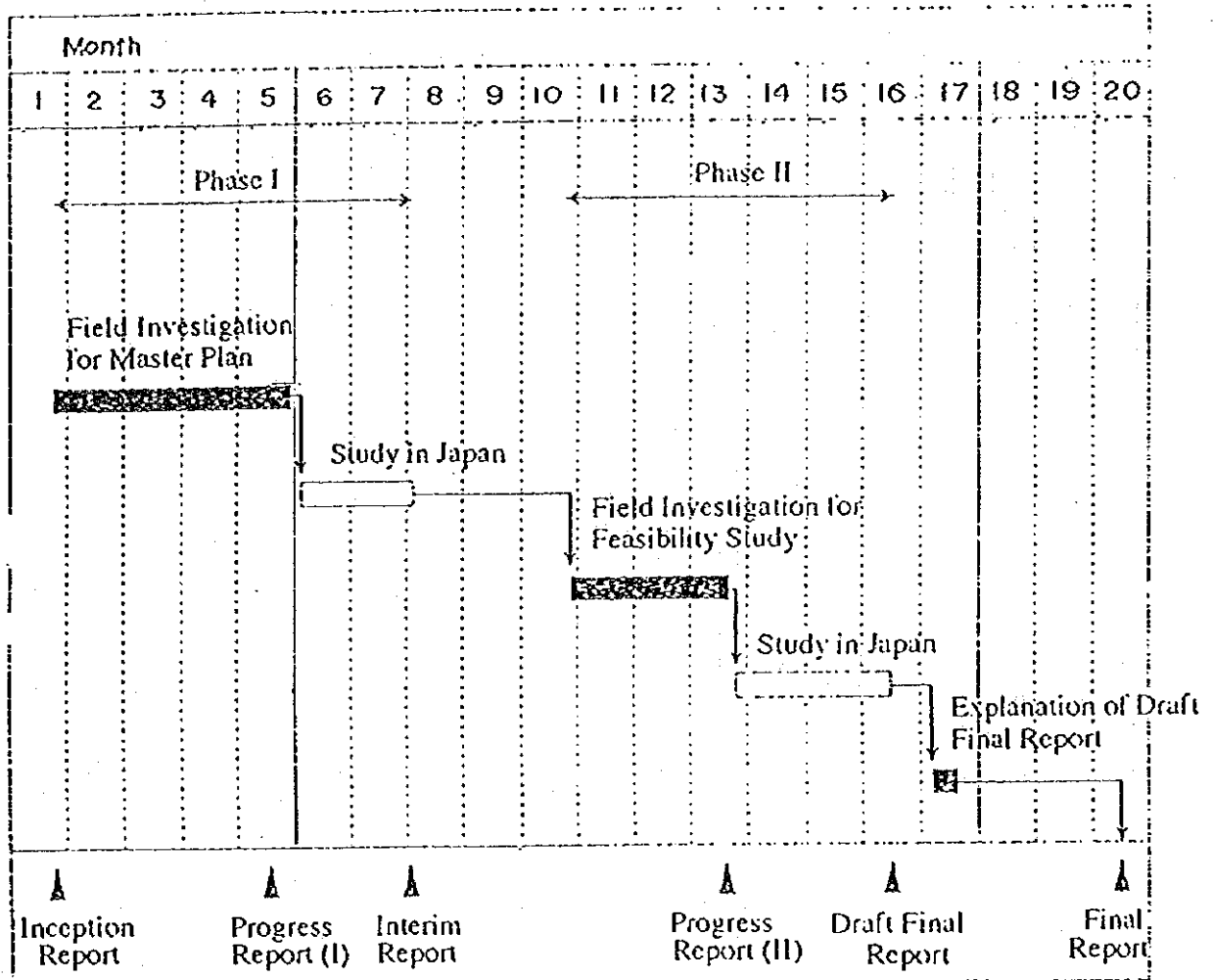
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MANAGEMENT LEVEL			0	3			0		0				0	3
ADMINISTRATION			0	1		1	1	1	4		19	8	27	34
ORGANISATION			0	2		0	1	2		0	4	1	5	9
PLANNING			0	3		4	5	3		0	8	2	10	22
ACCOUNTING			0	1		2	3	5		11	19	4	23	43
DESIGN	1		1	41		23	39	2		1	24	6	30	115
CONSTRUCTION			0	34		55	72	7		6	193	3	196	332
WATER MANAGMT.			0	20		17	19	2		5	55		55	104
HYDRO-METEO.			0	6		34	47	8		3	21	11	32	101
TOTAL	1		1	110		136	186	25		19	343	35	378	124

ORGANIZATION CHART OF THE MINISTER
AGRICULTURE AND FORESTRY AND FISHERIES

Total permanent staff : 5706 people



Schedule of Study



(5) 収集資料リスト

現地収集資料リスト

No	資料の名称	形態	版型	ページ数	original or copy	発行機関
1	Directory of Water Supply & Sanitation Projects in Cambodia, 1994	本	A4	230	original	NGO(Water and Sanitation Sector)
2	Directory of Humanitarian Assistance in Cambodia, 1994	本	A4	320	original	NGO(CCC)
3	Directory of Humanitarian Assistance in Cambodia, 1995	本	A4	143	original	NGO(CCC)
4	Trial & Error	月刊	A4	23	original	NGO(UVC)
5	NGO Local Salary Survey	文書	A4	11	copy	NGO(CCC)
6	UNDP Environmental and Natural Resource Projects Cambodia (7/10/95)	文書	A4	7	copy	UNDP
7	An Environmental Study of the Mckong Basin in Cambodia (4/1995)	本	A4	50	copy	MDRN(Cambodia) and IDRC(Canada)
8	Cambodia 全国地図(1/500,000)	地図	不定	1	original	不明 (市販品)
9	Analysis of Land Cover Atlas by Landsat in Cambodia (Draft, 10, march, 1995)	本	A4	23	copy	Prepared by KAWAI Dep. of A.H.H.M.
10	Animals, Reptiles, Birds, Freshwater-fishes in Cambodia	文書	A4	16	copy	Prepared by Dr.Um Bunna (Mini.of Envi., Director)
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JICA