

表 5.5.1 総事業費概要

(Unit : Nu'000)

Project Area	Tangmachhu Area			Masangdaza Area			Total		
	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total
1. Irrigation Facilities	23,121	13,126	36,247	12,396	4,735	17,131	35,517	17,861	53,378
2. Other Rural Facilities	16,508	3,213	19,721	17,667	2,699	20,366	34,175	5,912	40,087
Sub-Total (1-2)	39,629	16,339	55,968	30,063	7,434	37,497	69,692	23,773	93,465
3. Administration Cost	0	560	560	0	376	376	0	936	936
4. Engineering Services	4,321	480	4,801	2,896	321	3,217	7,217	801	8,018
Sub-Total (3-4)	4,321	1,040	5,361	2,896	697	3,593	7,217	1,737	8,954
5. Physical Contingency (P/C:6%)	2,638	1,044	3,682	1,979	487	2,466	4,617	1,531	6,148
Sub-Total (1-5)	46,588	18,423	65,011	34,938	8,618	43,556	81,526	27,041	108,567
6. Price Contingency (F/C:3%,L/C:8%)	3,460	3,882	7,342	2,486	1,786	4,272	5,946	5,668	11,614
TOTAL (1-6)	50,048	22,305	72,353	37,424	10,404	47,828	87,472	32,709	120,181

表 5.5.2 年次別事業費

Project Area	Total			1989			1990			1991		
	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total
Tangmachhu Area												
1. Irrigation Facilities	23,121	13,126	36,247	0	0	0	11,330	5,063	16,393	11,791	8,063	19,854
2. Other Rural Facilities	16,508	3,213	19,721	0	0	0	8,399	3,145	11,544	8,109	68	8,177
Sub-Total (1-2)	39,629	16,339	55,968	0	0	0	19,729	8,208	27,937	19,900	8,131	28,031
3. Administration Cost	0	560	560	0	0	0	0	280	280	0	280	280
4. Engineering Services	4,321	480	4,801	2,377	264	2,641	1,080	120	1,200	864	96	960
Sub-Total (3-4)	4,321	1,040	5,361	2,377	264	2,641	1,080	400	1,480	864	376	1,240
5. Physical Contingency (P/C:6%)	2,638	1,044	3,682	143	16	159	1,249	517	1,766	1,246	511	1,757
Sub-Total (1-5)	46,588	18,423	65,011	2,520	280	2,800	22,058	9,125	31,183	22,010	9,018	31,028
6. Price Contingency (F/C:3%,L/C:8%)	3,460	3,882	7,342	76	22	98	1,343	1,518	2,861	2,041	2,342	4,383
TOTAL (1-6)	50,048	22,305	72,353	2,596	302	2,898	23,401	10,643	34,044	24,051	11,360	35,411
Masangdaza Area												
1. Irrigation Facilities	12,396	4,735	17,131	0	0	0	7,727	1,951	9,678	4,669	2,784	7,453
2. Other Rural Facilities	17,667	2,699	20,366	0	0	0	10,772	2,002	12,774	6,895	697	7,592
Sub-Total (1-2)	30,063	7,434	37,497	0	0	0	18,499	3,953	22,452	11,564	3,481	15,045
3. Administration Cost	0	376	376	0	0	0	0	188	188	0	188	188
4. Engineering Services	2,896	321	3,217	1,593	177	1,770	724	80	804	579	64	643
Sub-Total (3-4)	2,896	697	3,593	1,593	177	1,770	724	268	992	579	252	831
5. Physical Contingency (P/C:6%)	1,979	487	2,466	96	10	106	1,154	253	1,407	729	224	953
Sub-Total (1-5)	34,938	8,618	43,556	1,689	187	1,876	20,377	4,474	24,851	12,872	3,957	16,829
6. Price Contingency (F/C:3%,L/C:8%)	2,486	1,786	4,272	51	15	66	1,241	744	1,985	1,194	1,027	2,221
TOTAL (1-6)	37,424	10,404	47,828	1,740	202	1,942	21,618	5,218	26,836	14,066	4,984	19,050
Total												
1. Irrigation Facilities	35,517	17,861	53,378	0	0	0	19,057	7,014	26,071	16,460	10,847	27,307
2. Other Rural Facilities	34,175	5,912	40,087	0	0	0	19,171	5,147	24,318	15,004	765	15,769
Sub-Total (1-2)	69,692	23,773	93,465	0	0	0	38,228	12,161	50,389	31,464	11,612	43,076
3. Administration Cost	0	936	936	0	0	0	0	468	468	0	468	468
4. Engineering Services	7,217	801	8,018	3,970	441	4,411	1,804	200	2,004	1,443	160	1,603
Sub-Total (3-4)	7,217	1,737	8,954	3,970	441	4,411	1,804	668	2,472	1,443	628	2,071
5. Physical Contingency (P/C:6%)	4,617	1,531	6,148	239	26	265	2,403	770	3,173	1,975	735	2,710
Sub-Total (1-5)	81,526	27,041	108,567	4,209	467	4,676	42,435	13,599	56,034	34,882	12,975	47,857
6. Price Contingency (F/C:3%,L/C:8%)	5,946	5,668	11,614	127	37	164	2,584	2,262	4,846	3,235	3,369	6,604
TOTAL (1-6)	87,472	32,709	120,181	4,336	504	4,840	45,019	15,861	60,880	38,117	16,344	54,461

表 5.7.1 モデル農村計画地区の灌漑便益

Crop	A		B		C=AXB		D		E=Dx100xE		F		G=AXF		H=E-G	
	Area (ha)	Unit yield (ton/ha)	Unit produc- tion (ton)	Unit Price (Nu/kg)	Gross production value (Nu)	Unit production cost (Nu/ha)	Total production cost (Nu)	Total production value (Nu)	Unit production cost (Nu/ha)	Total production cost (Nu)	Total production value (Nu)	Net production value (nu)				
<b>Tangmachhu</b>																
Without project																
Paddey	170	2.2	374	2.9	1,084,600	4,030	685,100	1,084,600	4,030	685,100	399,500					
Wheat	2	1.0	2	3.9	7,800	1,350	2,700	7,800	1,350	2,700	5,100					
Potato	2	2.1	4	1.6	6,700	3,130	6,300	6,700	3,130	6,300	400					
Total	-	-	-	-	1,099,100	-	694,100	1,099,100	-	694,100	405,000					
With project																
Paddy	220	5.0	1,100	2.9	3,190,000	4,600	1,012,000	3,190,000	4,600	1,012,000	2,178,000					
Wheat	55	1.8	99	3.9	386,100	1,410	77,600	386,100	1,410	77,600	308,500					
Mustard	55	0.9	50	3.6	178,200	1,310	72,100	178,200	1,310	72,100	106,100					
Total	-	-	-	-	3,754,300	-	1,161,700	3,754,300	-	1,161,700	2,592,600					
Net Incremental {(With project)-(Without project)}																
<b>Masangdaza</b>																
Without project																
Paddey	30	1.5	45	2.9	130,500	4,030	120,900	130,500	4,030	120,900	9,600					
Maize (1st)	20	1.1	22	3.1	68,200	1,870	37,400	68,200	1,870	37,400	30,800					
Maize (2nd)	5	1.1	6	3.1	17,100	1,530	7,700	17,100	1,530	7,700	9,400					
Buckwheat	5	0.4	2	1.4	2,800	510	2,600	2,800	510	2,600	200					
Mustard	1	0.3	0	3.6	1,100	610	600	1,100	610	600	500					
Total	-	-	-	-	219,700	-	169,200	219,700	-	169,200	50,500					
With project																
Paddy	80	5.0	400	2.9	1,160,000	4,600	368,000	1,160,000	4,600	368,000	792,000					
Wheat	20	1.8	36	3.9	140,400	1,410	28,200	140,400	1,410	28,200	112,200					
Mustard	20	0.9	18	3.6	64,800	1,310	26,200	64,800	1,310	26,200	38,600					
Total	-	-	-	-	1,365,200	-	422,400	1,365,200	-	422,400	942,800					
Net Incremental {(With project)-(Without project)}																



付 図



Work Item	1987			1988												1989		
	Nov	Dec	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
<b>I. First Phase</b>																		
(1) Preparatory Work in Japan			□															
(2) Field Survey and Investigation			■															
(3) Data Analysis and Study (in Japan)																		
<b>II. Second Phase</b>																		
(1) Field Survey and Investigation										■								
(2) Data Analysis and Study (in Japan)													□					
(3) Explanation of Draft Final Report (in Bhutan)														■				
(4) Preparation of Final Report																		
<b>Submission of Report</b>																		
1. Inception Report																		
2. Progress Report																		
3. Interim Report																		
4. Draft Final Report																		
5. Final Report																		

■ : Field Work in Bhutan. □ : Home Office Work in Japan.

图 1.3.1 作 業 工 程

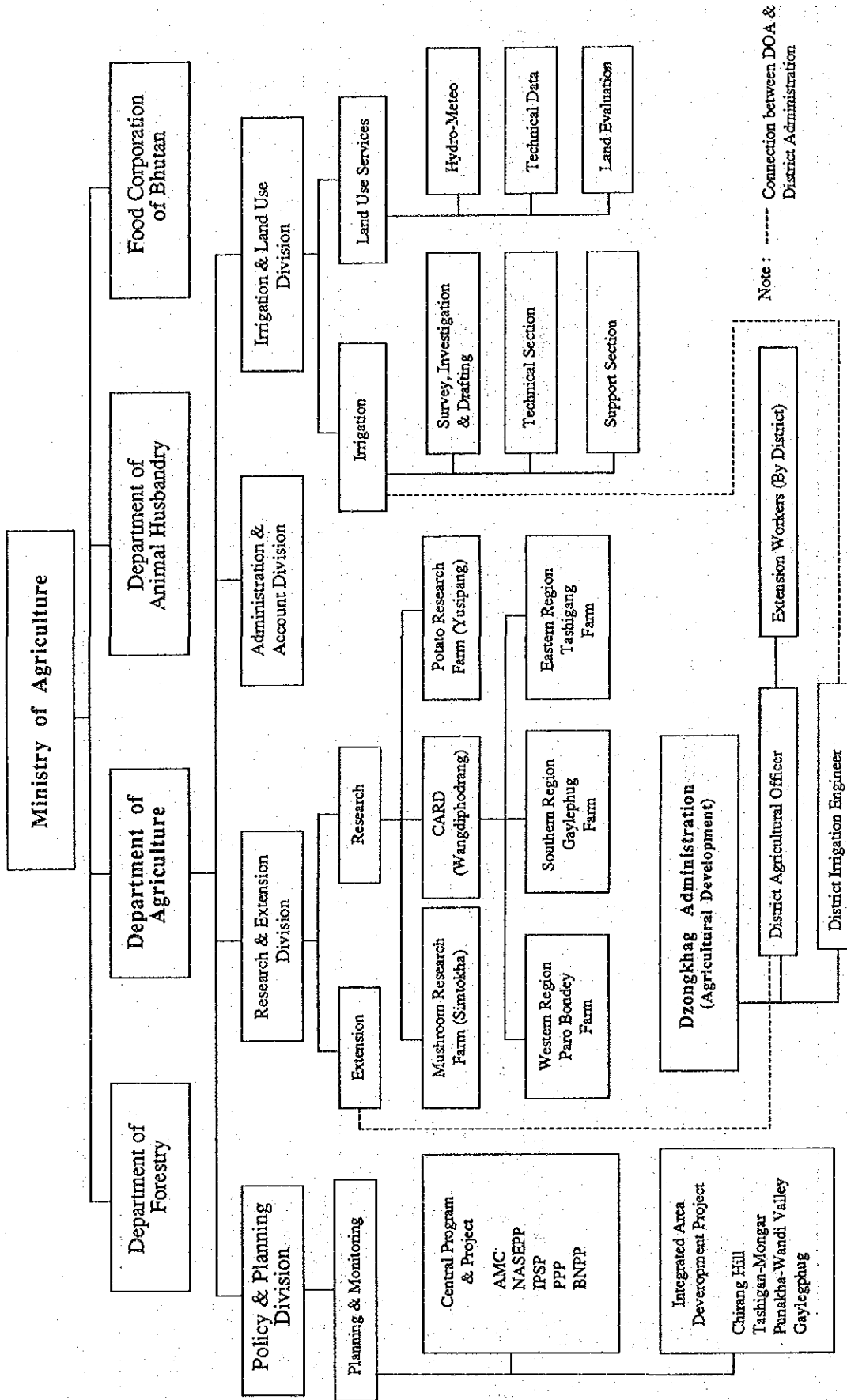


图 2.3.1 全国農業支援体制組織図



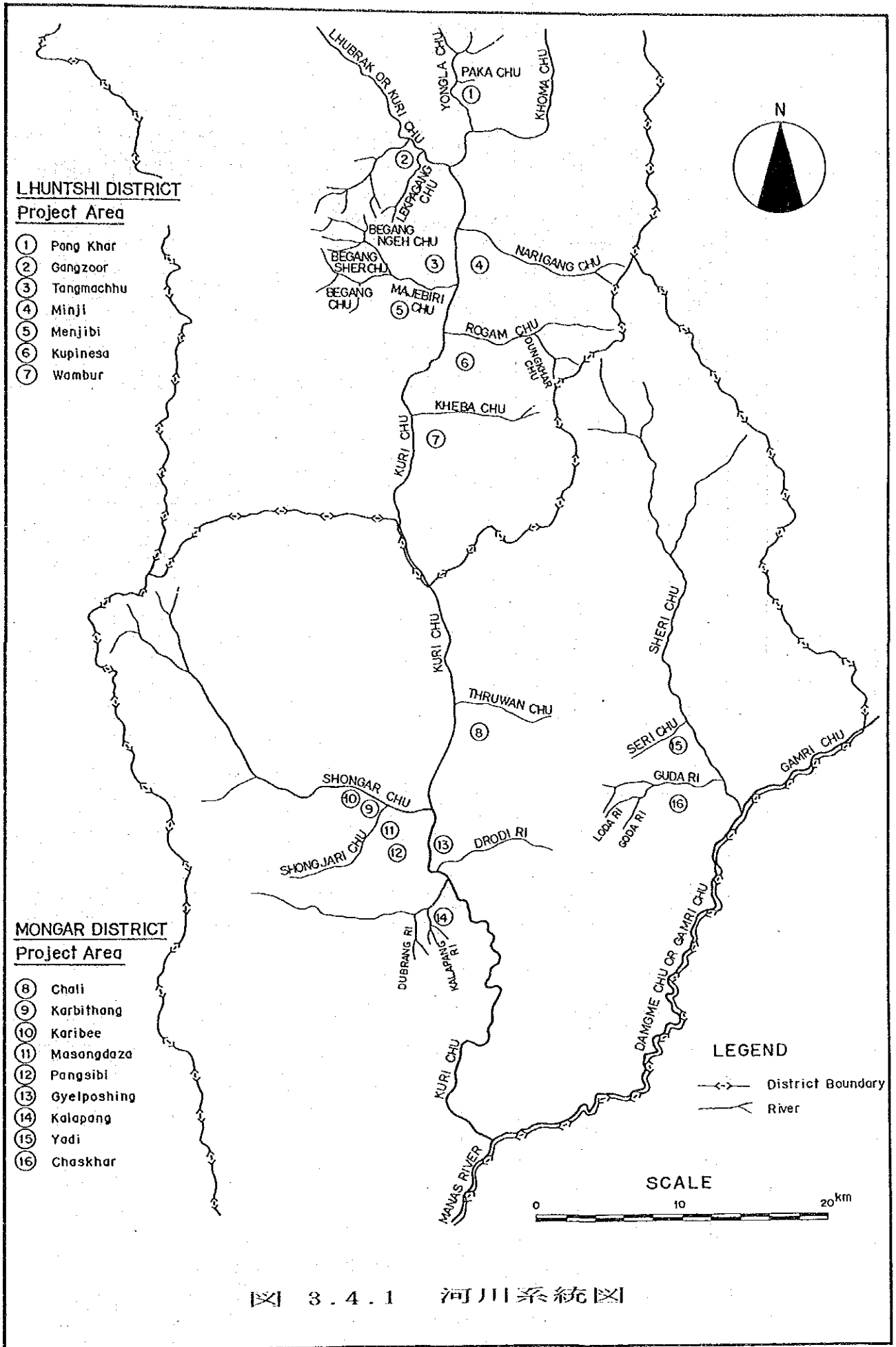


图 3.4.1 河川系統図

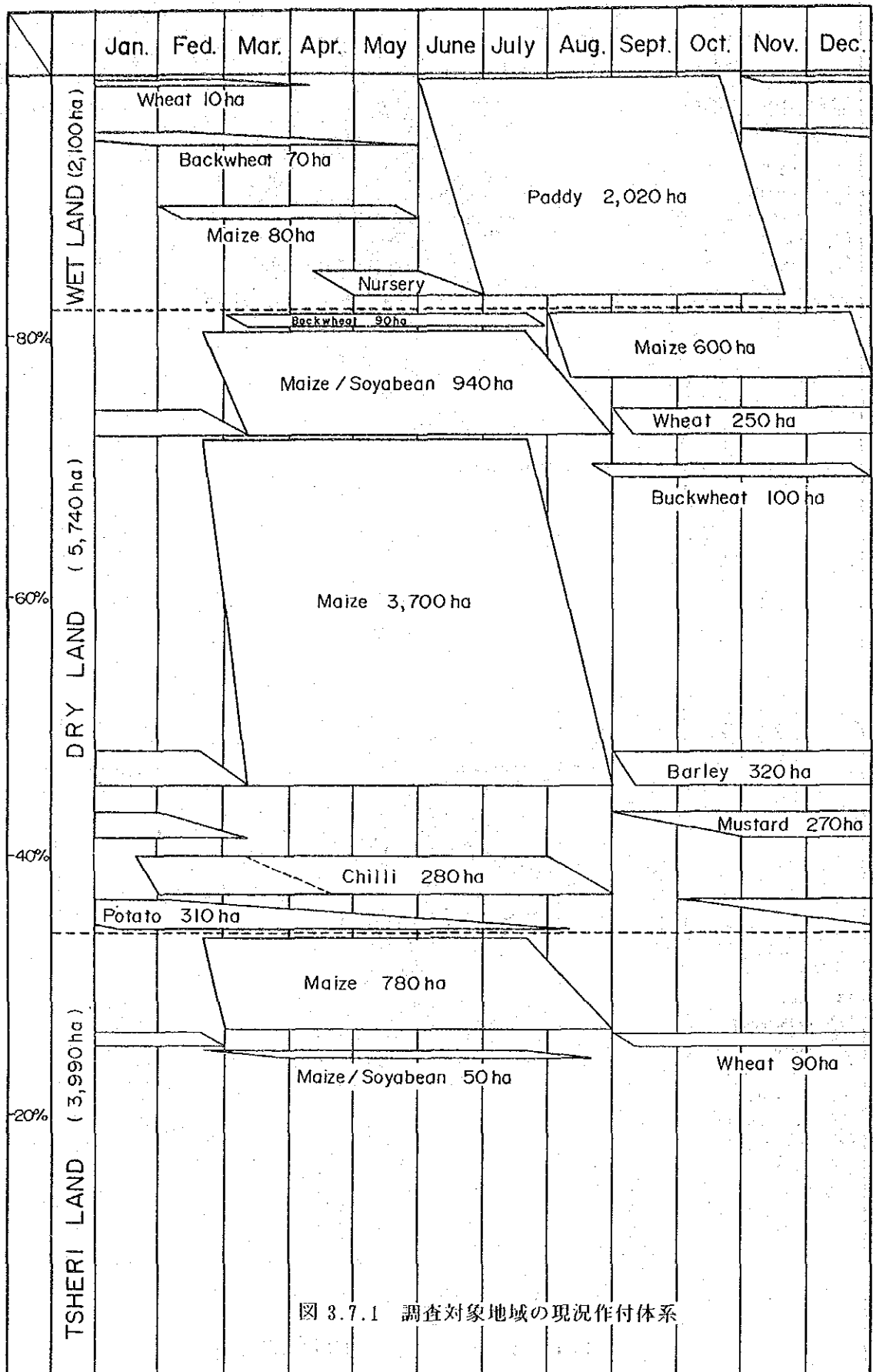
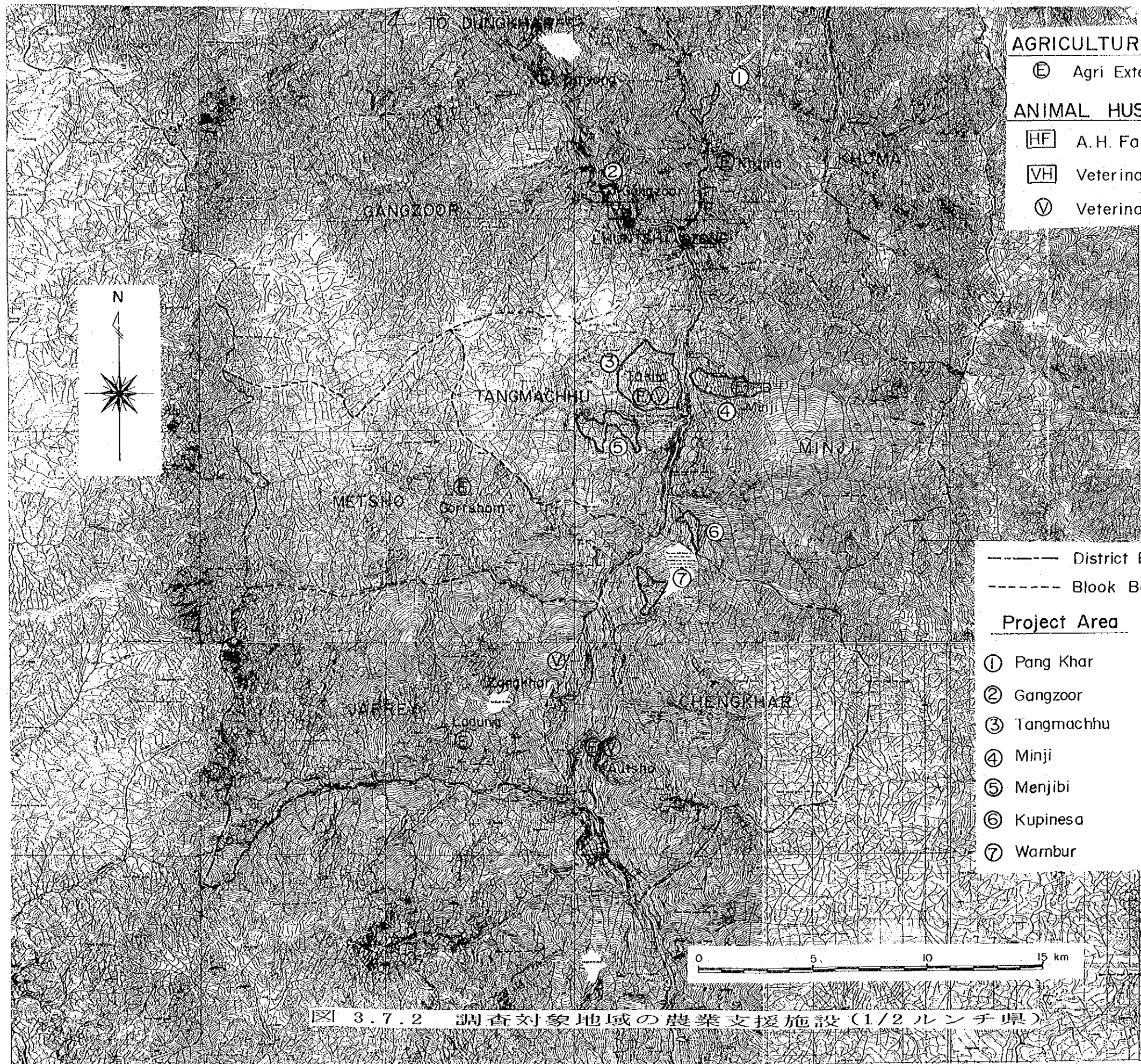


図 3.7.1 調査対象地域の現況作付体系



**AGRICULTURE**

Ⓔ Agri Extension Center

**ANIMAL HUSBANDRY**

HF A.H. Farm

VH Veterinary Hospital

Ⓥ Veterinary Center

----- District Boundary

..... Block Boundary

**Project Area**

① Pang Khar

② Gangzoor

③ Tangmachhu

④ Minji

⑤ Menjibi

⑥ Kupinesa

⑦ Wambur

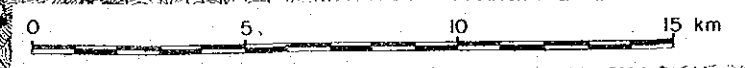
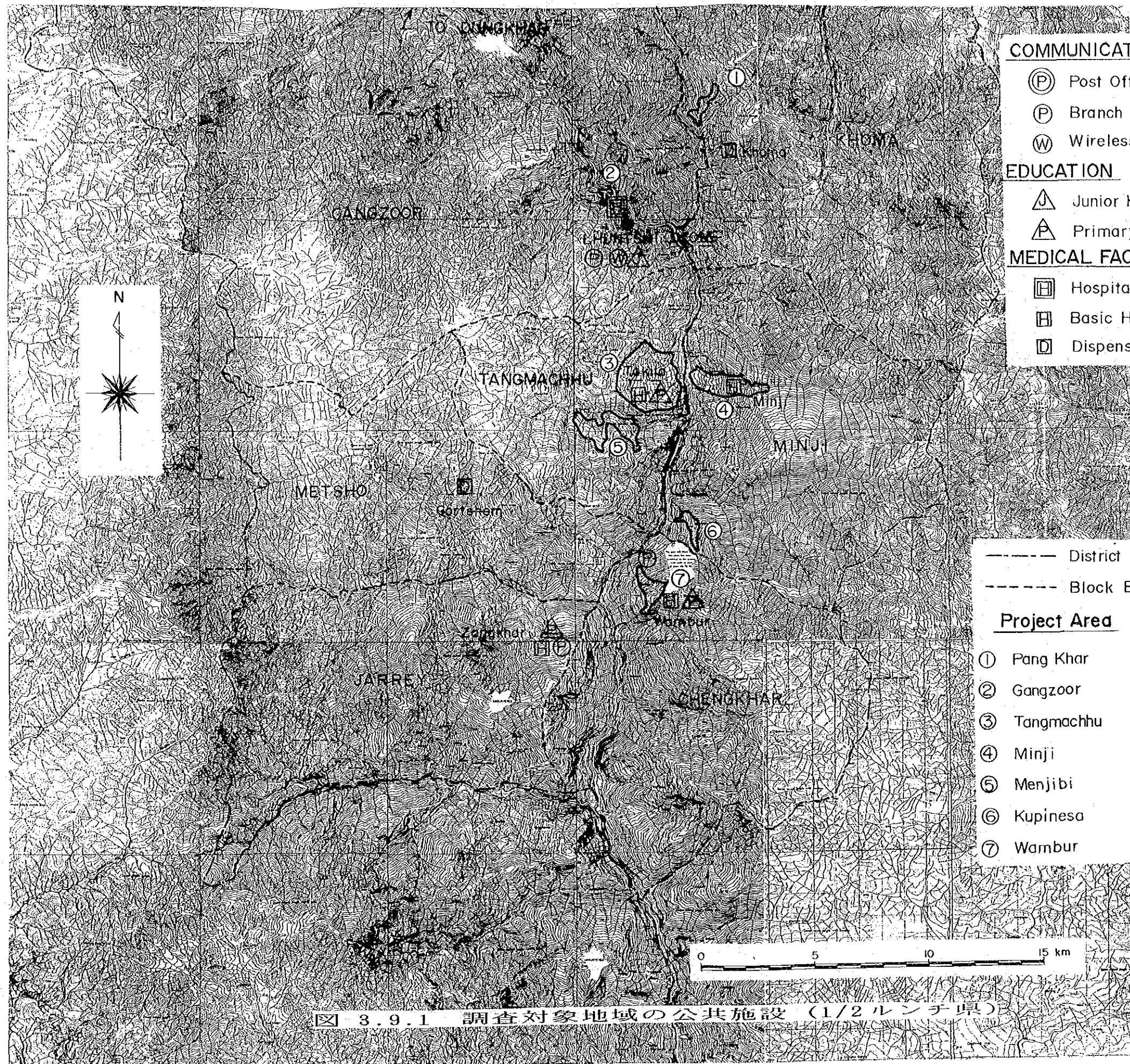


図 3.7.2 調査対象地域の農業支援施設 (1/2 ルンチ県)









**COMMUNICATION**

- Ⓟ Post Office
- Ⓟ Branch Post Office
- Ⓜ Wireless Station

**EDUCATION**

- △ Junior High School
- △ Primary School

**MEDICAL FACILITY**

- Ⓜ Hospital
- Ⓜ Basic Health Unit
- Ⓜ Dispensary

- District Boundary
- ..... Block Boundary

**Project Area**

- ① Pang Khar
- ② Gangzoor
- ③ Tangmachhu
- ④ Minji
- ⑤ Menjibi
- ⑥ Kupinesa
- ⑦ Wambur

図 3.9.1 調査対象地域の公共施設 (1/2 ルンチ県)



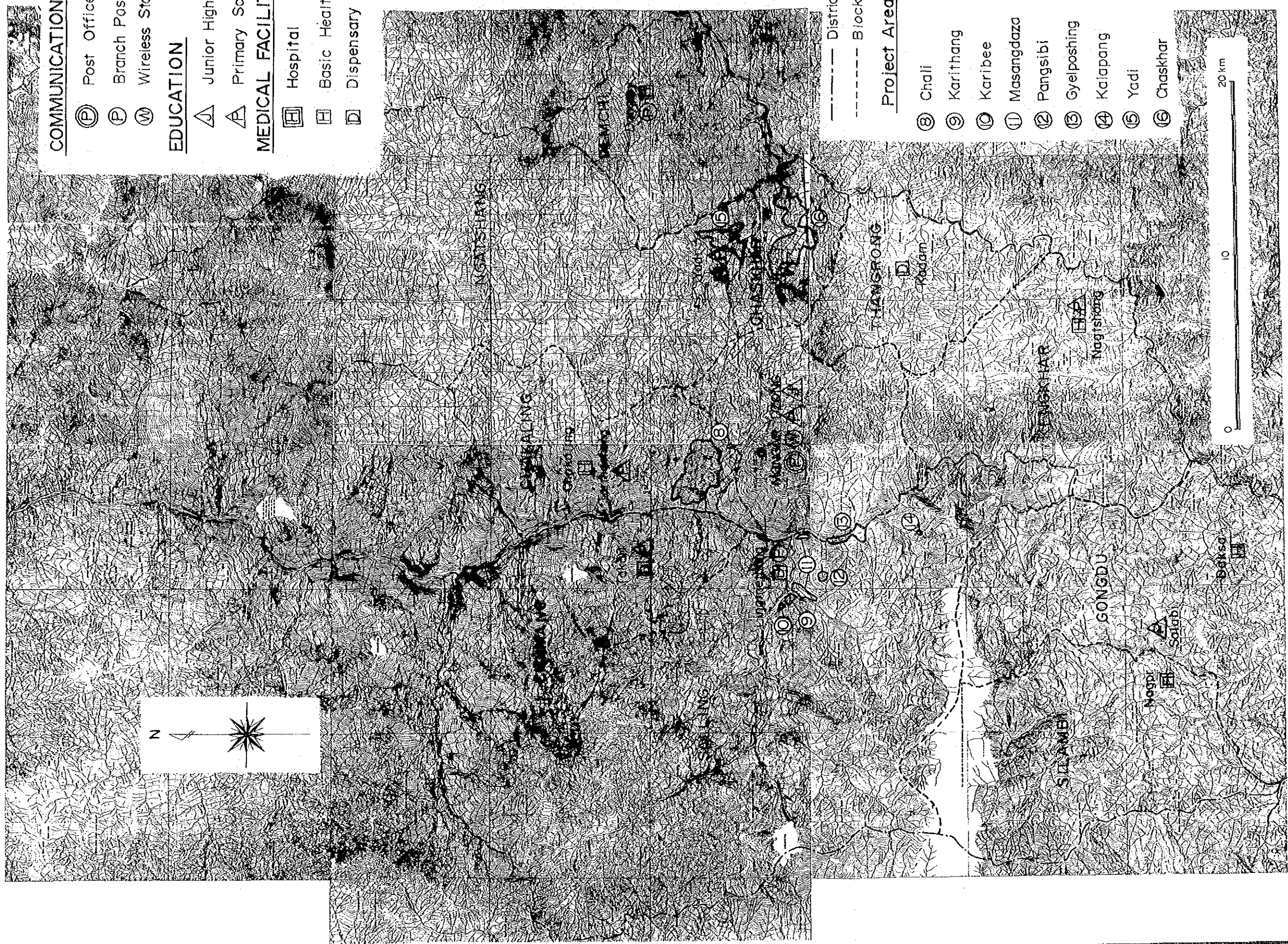


图 3.9.1 調査対象地域の公共施設 (2/2モンゴル県)



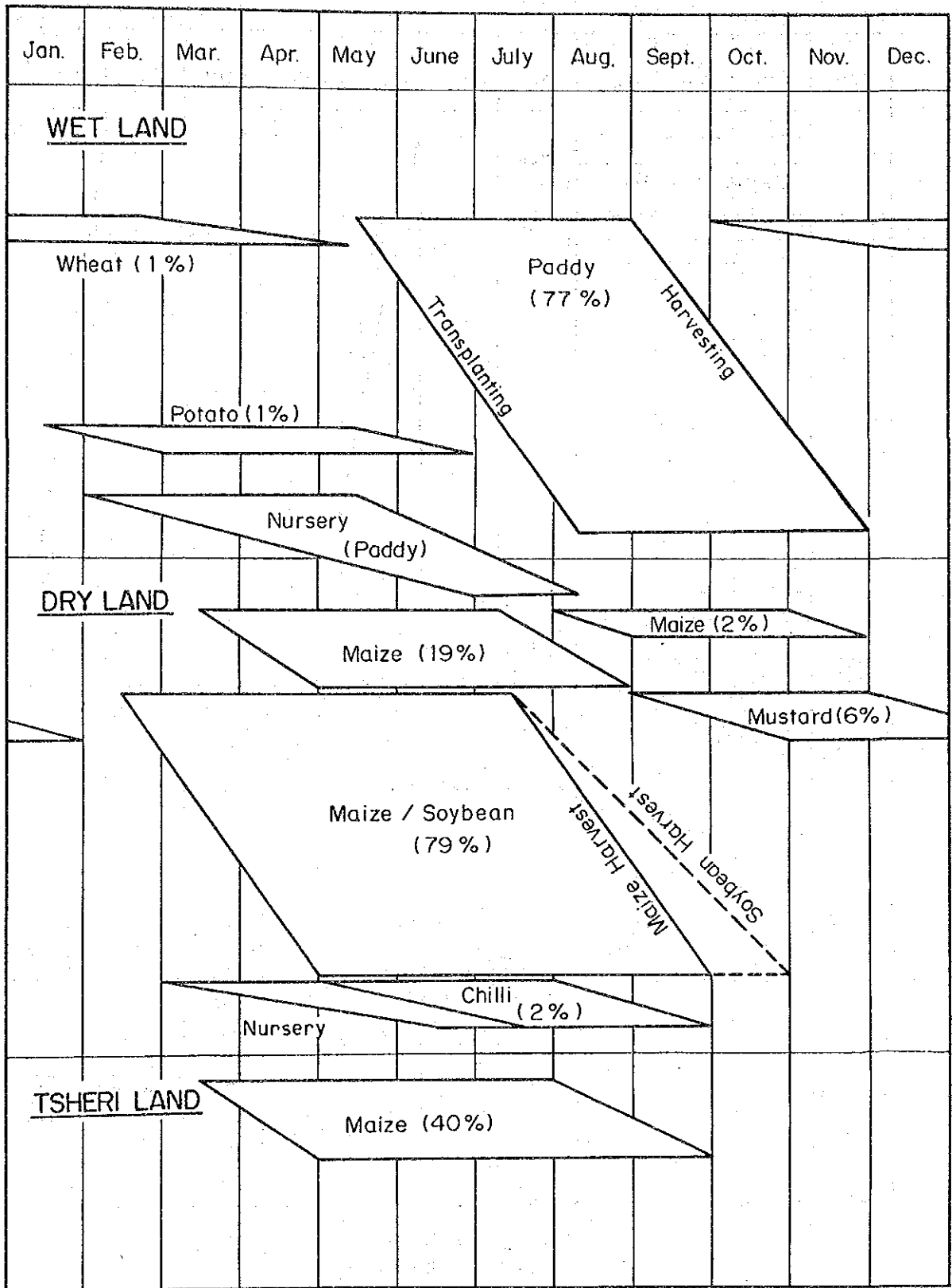


図 5.2.1 モデル農村計画地区の現況作付体系 (2/1)  
(タンマチュー地区)



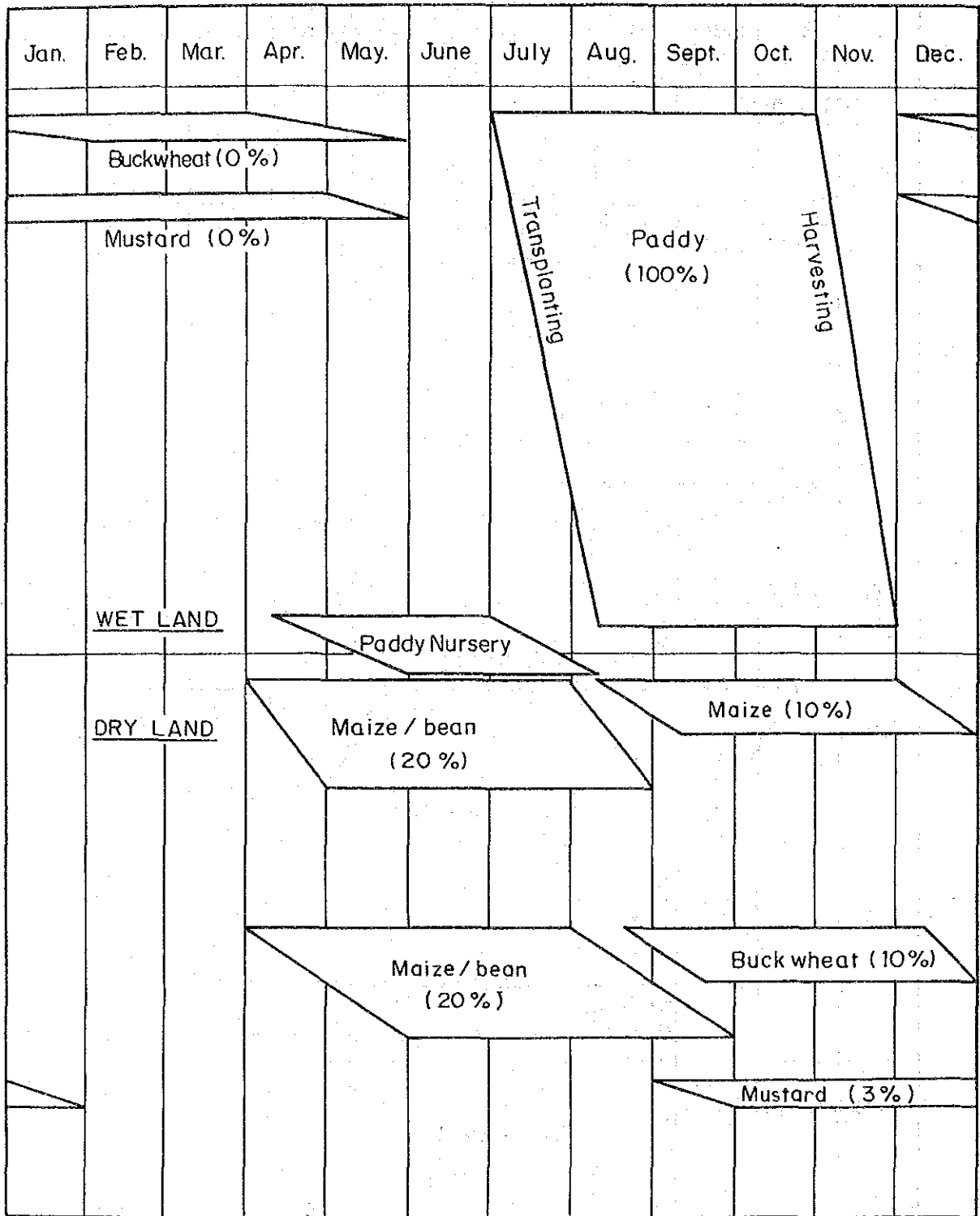


図 5.2.1 モデル農村計画地区の現況作付体系 (2/2)  
(マサンダサ統合地区)

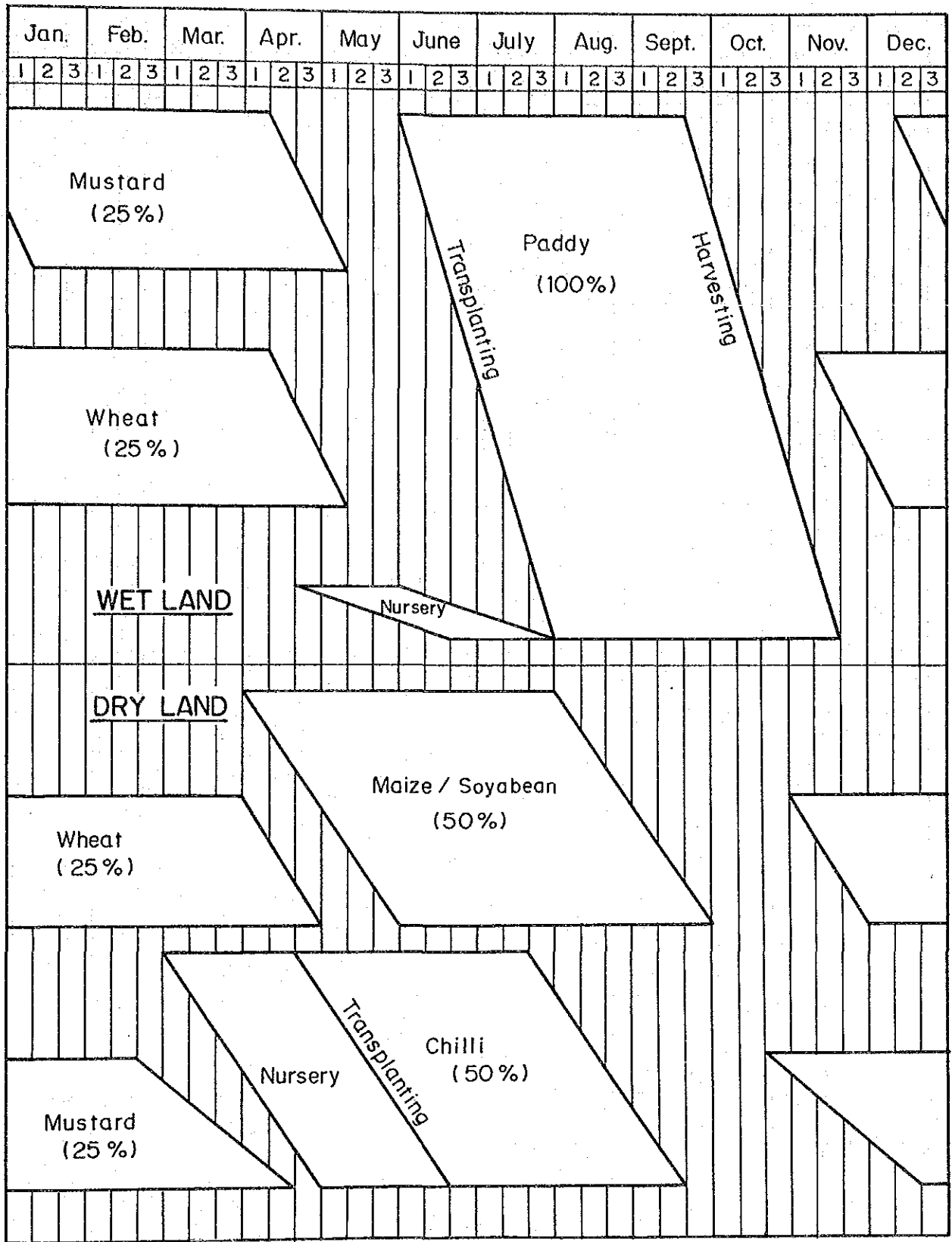


図 5.3.1 モデル農村計画地区の計画作付体系 (1/2)  
(タンマチュー地区)

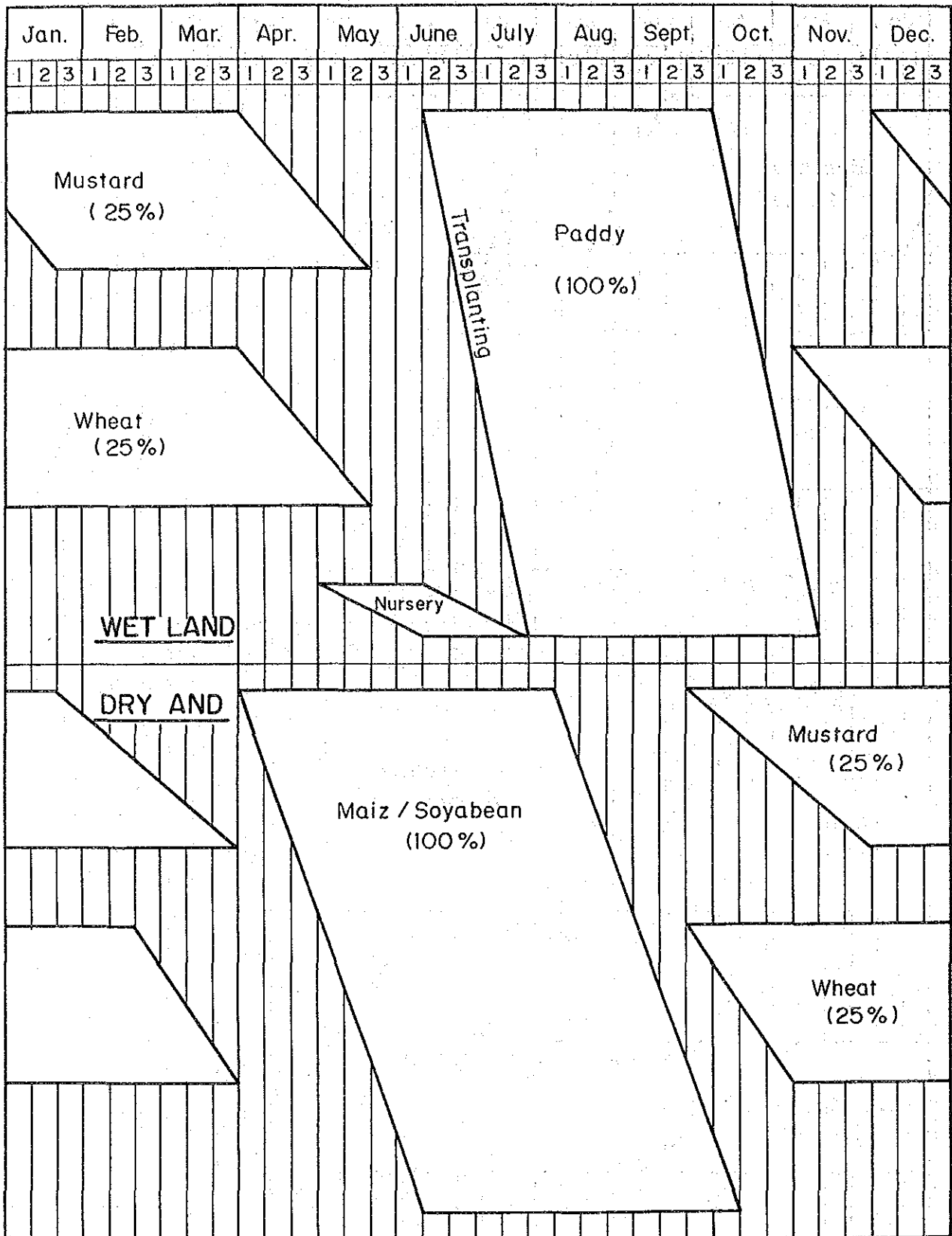


図 5.3.1 モデル農村計画地区の計画作付体系 (2/2)  
(マサンダサ統合地区)

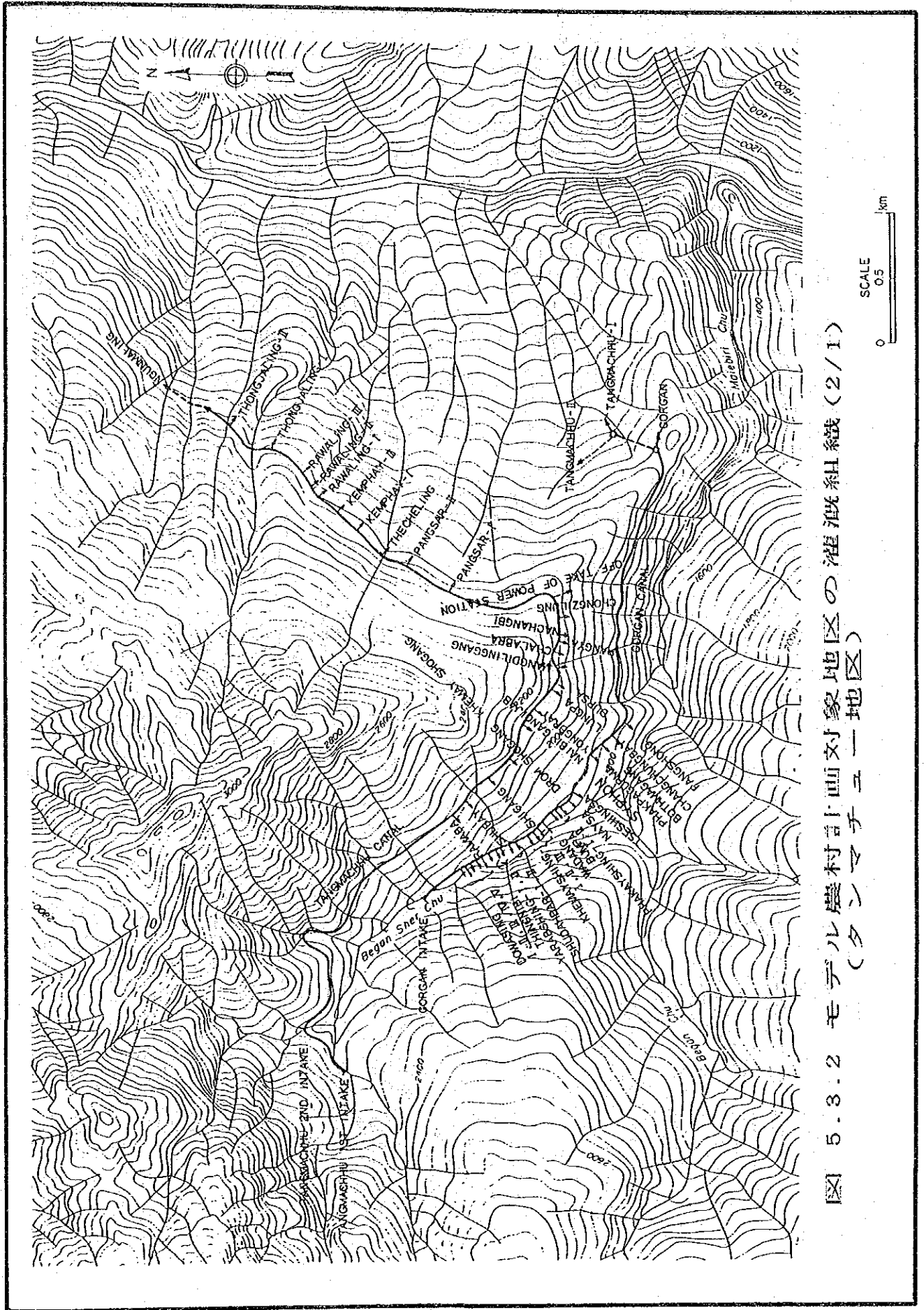


図 5.3.2 モデル農村計画対象地区の灌漑組織 (2/1)  
(タンマチユー地区)





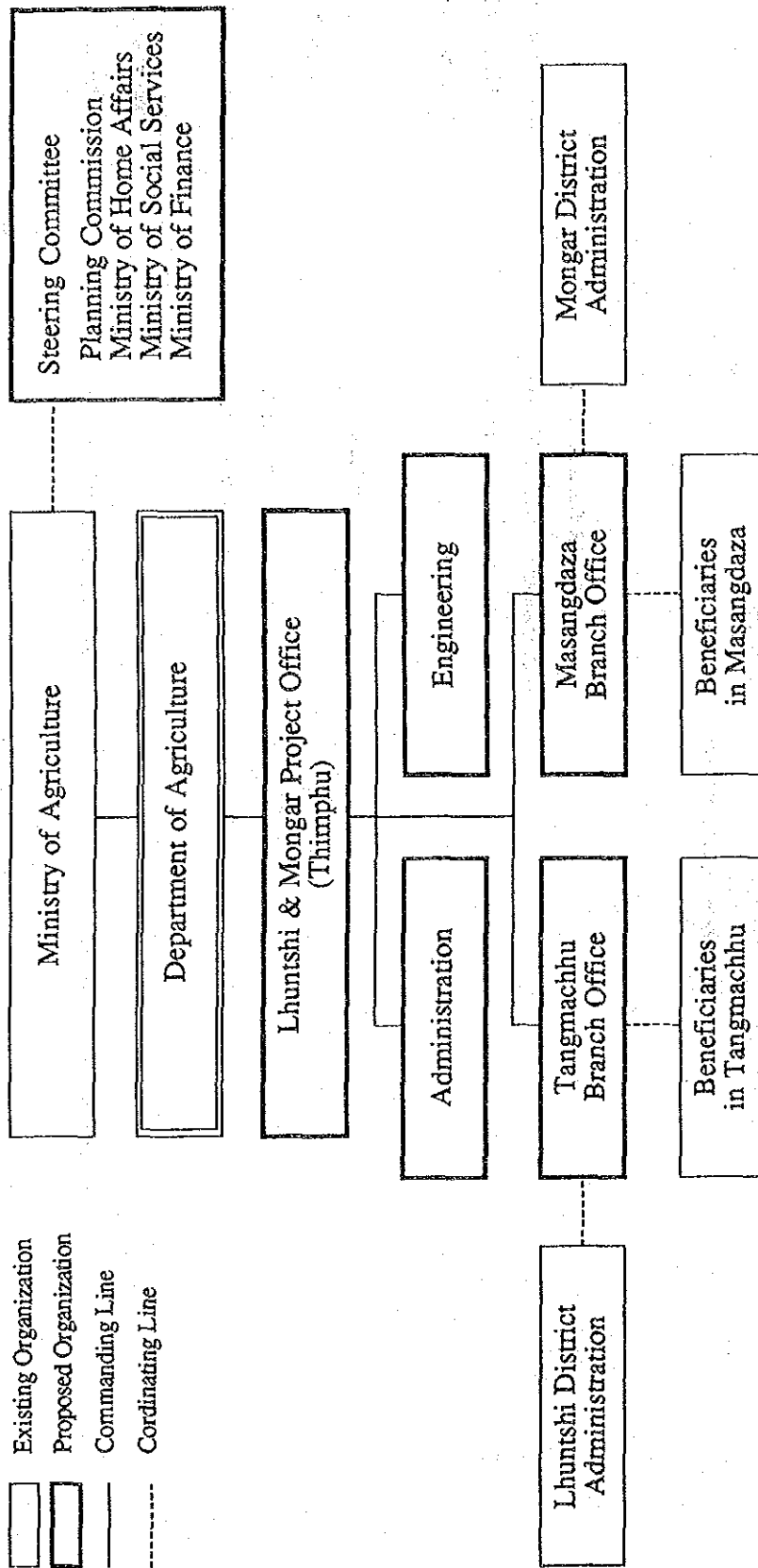


图 5.6.1 事業実施組織

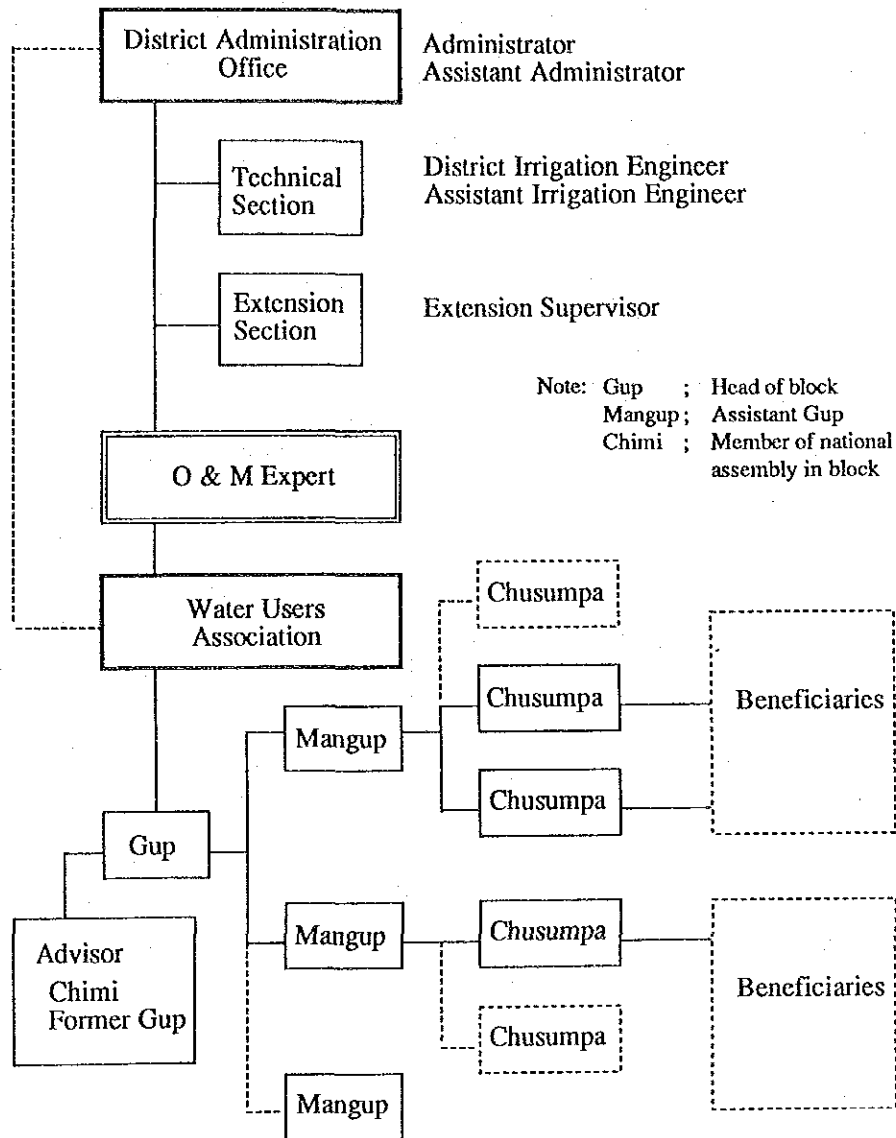


図 5.6.2 灌漑排水施設の維持管理組織

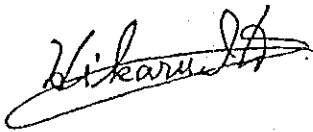




添付資料



SCOPE OF WORK  
FOR  
THE FEASIBILITY STUDY  
ON  
THE LHUNTSHI AND MONGAR  
INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT



Mr. Hikaru Itou  
Leader of the Preliminary  
Survey Team,  
Japan International Cooperation Agency.  
JICA



MINISTRY OF AGRICULTURE  
AND  
FORESTRY

## I. INTRODUCTION

In response to the request of the Royal Government of BHUTAN , the Government of Japan decided to conduct the Feasibility Study on the Lhunch and Mongar Integrated Agricultural Development Project (hereinafter referred to as "the Study " ). Accordingly the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of technical programme of the Government of Japan, will undertake the Study in close cooperation with the authorities of the Royal Government of BHUTAN. The present document sets forth the Scope of Work for the Study.

## II. OBJECTIVE OF THE STUDY

The objective of the Study is to examine the technical, economic and financial feasibility of the Lhunch and Mongar Integrated Agricultural Development Project .

## III. OUTLINE OF THE STUDY

In order to achieve the objective mentioned above, the Study shall cover the following items:

### 1. Project area

The project covers total study area of about 2,000ha in Lhunch and Mongar district including 17 sites already cultivated

### 2. Scope of the Study

The activities to be undertaken by the Japanese Study Team will be divided into two stages as follows.

#### 1) Phase I (Pre-Feasibility) Study:

To conduct the preliminary study on the integrated agricultural development project.

#### 2) Phase II (Feasibility) Study:

To conduct the feasibility study of the Lhunch and Mongar Integrated Agricultural Development Project based on the results of the phase I Study.

- 3) Formulation of the integrated development plan
- 4) Preliminary design of the major structures
- 5) Operation and maintenance
- 6) Preparation of the implementation schedule
- 7) Estimation of the project cost and benefit
- 8) Evaluation of the project
- 9) Recommendation

#### IV. WORK SCHEDULE

The whole work will be carried out in accordance with the attached tentative schedule (See Appendix I)

#### V. REPORTS

JICA will prepare and submit the following reports in English to The Royal Government of BHUTAN

1. Inception Report:

Twenty(20)copies at the commencement of the Field Study (PHASE I)

2. Progress Report:

Twenty(20)copies at the end of the Field Study (PHASE I)

3. Interim Report:

Twenty(20)copies at the commencement of the Field Study (PHASE II)

4. Draft Final Report

Twenty(20)copies at the completion of the home-office work (PHASE II),  
Within a month after the presentation of the Draft Final Report, the Royal Government of BHUTAN shall forward the final comments on the Draft Final Report to JICA through the Embassy of Japan in India.

5. Final Report:

Fifty(50)copies within two(2)months after receiving the comments on the Draft Final Report from the Royal Government of BHUTAN.

## 2-1. Work Plan for the Phase I Study

(1) To carry out data collection and field survey on the following items

- a. Topography
- b. Meteorology
- c. Hydrology
- d. Geology
- e. Soil
- f. Irrigation and Drainage
- g. Land use
- h. Farming Practice
- i. Rural infrastructure
- j. Agro/regional economy and institutions
- k. Others

(2) To formulate a basic development concept

## 2-2. Work plan for the Phase II Study

1) To Study the following items

- a. Soil and land classification survey
- b. Geological survey
- c. Land conservation survey
- d. Socio-economic survey
- e. Regional economic and agro-institutional survey
- f. Others

2) To determine the following basic items for the development plan

- a. Project area
- b. Land use
- c. Cropping pattern
- d. Water requirements
- e. Irrigation systems
- f. Estimation of yields
- g. Agro-institutional plan
- h. Rural infrastructure
- i. Others

## VI. UNDERTAKING OF THE ROYAL GOVERNMENT OF BHUTAN

1. To facilitate smooth conduct of the Study, the Royal Government of BHUTAN shall take necessary measures.
  - 1) To secure the safety of the Study Team.
  - 2) To permit the members of the Study Team to enter, leave and sojourn in the Royal Government of BHUTAN for the duration of their assignment therein, and exempt them from alien registration and consular fees.
  - 3) To exempt the members of the Study Team from taxes, duties and other charges on equipments, machinery and other materials brought into the Royal Government of BHUTAN for the conduct of the Study.
  - 4) To exempt the members of the Study Team from income tax and other charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study.
  - 5) To provide necessary facilities to the Study Team for remittances as well as utilization of the funds introduced into the Royal Government of BHUTAN from Japan in connection with the implementation of the Study.
  - 6) To secure permission for entry into private properties or restricted areas for the conduct of the Study.
  - 7) To secure permission for the Study Team to take all data and documents (including photographs) related to the Study out of the Royal Government of BHUTAN to Japan.
  - 8) To provide medical services as needed.
2. BHUTAN shall bear claims, if any arises against the members of the 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 wilful misconduct on the part of the members of the Study Team.



3. Ministry of Agriculture and Forestry ( hereinafter referred to as "MAF ") shall act as the counterpart agency to the Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. MAF shall, at its own expense, provide the Study Team with followings, in cooperation with other relevant organizations:
  - 1) Available data and information related to the Study.
  - 2) Counterpart personnel
  - 3) Suitable office space with necessary equipments in Timpu, Lhunch and Mongar
  - 4) Appropriate number of vehicles with drivers in the project area
  - 5) Credentials or identification cards

#### VII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. To dispatch, at its own expenses, Study Team to the Royal Government of BHUTAN,
2. To pursue technology transfer to counter personnel in the course of the Study,
3. To provide equipments necessary for the Study.

VIII. JICA and MAF shall consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX I

TENTATIVE SCHEDULE


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Field and Office Work in BHUTAN																
Office Work in Japan																
Submission of Report	△ Inc.R			△ P.R					△ I.R				△ D.R			△ F.R
Remarks																

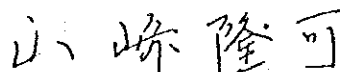
- Inc.R. Inception Report
- P.R. Progress Report
- I.R. Interim Report
- D.R. Draft Final Feasibility Study Report
- F.R. Final Feasibility Study Report



MINUTES OF MEETING  
ON  
THE INCEPTION REPORT  
OF  
THE LHUNTSHI AND MONGAR  
INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT  
IN  
THE KINGDOM OF BHUTAN

Thimphu  
23 December 1987.

  
\_\_\_\_\_  
Dasho Khandu Wangchuk  
Director, Department of  
Agriculture, Ministry of  
Agriculture, Royal  
Government of Bhutan.

  
\_\_\_\_\_  
Mr. Takayoshi Yamazaki  
Team Leader  
JICA Study Team

1. A meeting was held on 22nd December 1987 at the Department of Agriculture between representatives of the Royal Government of Bhutan (hereinafter referred to as the Bhutan Government) and the Japanese Team to discuss the Inception Report which were submitted to the Bhutan Government as stipulated in the scope of work. The list of those in attendance are shown in Appendix (I).
  
2. Several clarifications and issues were brought to the meeting and salient results of the meeting are as follows :-
  - 2.1 Bhutan Government requested that the JICA Study Team (hereinafter referred to as the Team) take into consideration the following items in the course of the study;
    - : Local transportation system such as rope-ways and mono-rails for agricultural inputs and products,
    - : Low maintenance cost of facilities,
    - : Cash Crops including oil crops and horticulture,
    - : Post harvest facilities such as handring, processing, packing, etc.,
    - : Land conservation.
  
  - 2.2 Both sides agreed that the Yangbari site be excluded from the study as presently it is inaccessible & far away from the other sites in the study.

*Handwritten:*  
23/12/87  
A-10



2.3 Both sides confirmed that the Bhutan Government would at its own expense, provide one out of three vehicles, drivers and necessary fuel for the Team throughout the Phase I study. However, because of its budgetary constraints, Bhutan Government requested that JICA prepare budget for the rent of three vehicles from the start of Phase (II).

2.4 Both sides confirmed that the Bhutan Government would provide full-time counterpart personnel as shown in Appendix (I) while a flexible arrangement would be made for the other occasional ones so that relevant engineers would benefit from specific areas of technology transfer undertaken by the Team.

As regards the counter-part training in Japan, Bhutan Government informed the Japanese Team that one in charge of agricultural development would be assigned for the training.

3. This minutes takes effect upon signing by representative of the Team and the Department of Agriculture designated as the authority to act as the counterpart agency to the Team and also as a co-ordinating body in Bhutan Government by Ministry of Agriculture stipulated in the Scope of Work.

*Kash*  
23/12/87  
A-11

(11)

Appendix (I)

List of Counter-part Staff.

1. Dasho Khandu Wangchuk : Director of Agriculture
2. Mr. D.B. Rai : Assistant Director of Agriculture
3. Mr. L.B. Rai : Assistant Engineer, Irrigation.
4. Mr. Chado Tenzin : Planning Officer, Agriculture Dept.

*ksd*  
*23/12/87*

Appendix (II)

MEMBERS OF MEETING

Place : Conference room in DOA

Time : 22, December 1987.

Government of Bhutan

Dasho Khandu Wangchuk : Director, DOA  
Mr. Tshering Dorji : Joint Director, DOA  
Mr. Pema Tenzin : Director, Ministry of Finance  
Mr. Sherub Tenzin : Deputy Secretary, Ministry of Home Affairs  
Mr. Kinlay Dorji : Planning Officer, Ministry of Agriculture.  
Mr. D.B. Rai, Asst. Director (soil), Department of Agriculture.  
Ms. Neelam Lama : Asst. Planning Officer, Planning Commission.  
Mr. L.B. Rai : Asst. Engineer, Department of Agriculture.  
Mr. Chado Tenzin : Planning Officer, DOA  
Mr. S. Karchung : Asst. Engineer, Survey of Bhutan.  
Mr. Mani Thapa : Asst. Planning Officer, Ministry of Agriculture.

The Japanese Team

Advisor :

Mr. Tsutomu Nakano, Coordinator, JICA

JICA Study Team :

Mr. Takayoshi Yamazaki, JICA Study Team (Team Leader)  
Mr. Chikaichi Takahashi : JICA Study Team member.  
Mr. Naoto Morioka : - do -  
Mr. Yuichi Fukasaka : - do -

*Kaf*  
23/12/87





MINUTES OF THE MEETING  
FOR  
THE FEASIBILITY STUDY  
ON  
THE LHUNTSHI AND MONGAR  
INTEGRATED AGRICULTURE DEVELOPMENT PROJECT

Date: March 22, 1988

Place: Conference Hall of the Planning Commission

Attendance : Refer to List of Participants.

The meeting on the Progress Report for the feasibility study on the Lhuntshi and Mongar Integrated Agricultural Development Project was held on March 22, 1988. The team leader of the JICA Study Team, Mr. Yamazaki explained the content of the Progress Report. Discussion was made between authorities concerned and the JICA Study Team.

Both sides agreed with the content of the Progress Report in general, however, the Bhutan side will send comments on the Progress Report and on selection of the model project areas by the end of April 1988 after dicussing with the concerned.

*Dasho Khandu Wangchuk* 22/3/88  
Dasho Khandu Wangchuk  
Director General  
Department of Agriculture  
Ministry of Agriculture  
Thimphu : Bhutan

*山崎隆平*  
Takayoshi Yamazaki  
Team Leader  
JICA Study Team

LIST OF PARTICIPANTS

<u>Name</u>	<u>Position</u>	<u>Agency</u>
Dasho C. Dorji	Secretary	Planning Commission
Dasho Leki Dorji	Secretary	Ministry of Agriculture
Dasho Khandu Wangchuk	Director General	Dept. of Agriculture
Mr. Sherap Tenzin	Deputy Secretary	Home Ministry
Mr. Dawa Tenzin	Planning Officer	Planning Commission
Mr. Mani Thapa	Asst. Planning Officer	Ministry of Agriculture
Mr. Chado Tenzin	Planning Officer	Dept. of Agriculture
Mr. T. Yamazaki	Team Leader	JICA Study Team
C. Takahashi	Irrigation Engineer	- do -
Mr. T. Kajimoto	Hydrologist	- do -
Mr. N. Morioka	Pedrogist	- do -
Mr. Y. Fukasaka	Agro-economist	- do -

MINUTES OF MEETING  
ON  
THE INTERIM REPORT  
FOR  
THE FEASIBILITY STUDY  
ON  
THE LHUNTSHI AND MONGAR  
INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

1. Date : July 11, 1988
2. Place : Meeting Hall, Planning Commission
3. Attendants : see attached list
4. Summary of Discussion

The Team Leader, Mr. T. Yamazaki explained the Interim Report to the attendants from authorities concerned. Various discussions were then made between attendants and the JICA Study team, and both sides confirmed the followings through discussion:

- (1) The Interim Report submitted to DOA on July 7, 1988 was basically accepted by DOA.
- (2) DOA agreed that Tangmachhu area in Lhuntshi and Masangdaza Integrated area in Mongar are selected as the model project areas.
- (3) DOA requested the JICA Study Team to include the survey and design of irrigation canals in other areas in the study of model project. The JICA Study Team explained it is difficult to include survey and design of irrigation canal in other areas because of the short survey period in the Second Phase.
- (4) Numbers and kinds of agricultural machineries and tools for the model projects should be determined and justified based on their requirements. These machineries and tools includes manual threshers, improved plow, manual weeders, manual transplanters, etc.
- (5) Agro-processing facilities should be selected based on their requirements not only in the model project areas but also relevant areas of the project areas. These agro-processing facilities are chilli milling facilities, oil extraction facilities, maize dry facilities, and maize grinder.

- (6) Reclamation of the paddy field from dry land is the one of the components in the Masangdaza Integrated area, but reclamation will be carried out by farmers themselves.
- (7) DOA requested the JICA Study Team to add the sub-title, along with the line of model project in Tangmachhu and Masanddaza, under the main title of the project, because DOA requires the sub-title for presentation to the Parliament as well as the Royal Government of Bhutan.
- (8) DOA has requested the JICA Study Team to consider supplying a few tractors (along with the trucks) for facilitating transportation from the village to the highway.
- (9) In response to the DOA request for more machines and equipments, the JICA Study Team pointed out that it would be easier to avail such equipments under KR-II rather than through this project.
- (10) In view of the large scale of activities which will take place in the project, the Planning Commission has asked the JICA Study Team to keep in mind, the environment aspect of the project i.e. to try and incorporate soil, forest, etc. conservation activities.

*Khandu Wangchuk*

Dasho Khandu Wangchuk  
Director General  
Department of Agriculture  
Ministry of Agriculture  
Royal Government of Bhutan

*山崎隆可*

Takayoshi Yamazaki  
Team Leader  
JICA Study Team

LIST OF PARTICIPANTS  
ON  
THE MEETING  
FOR  
THE INTERIM REPORT  
FOR  
THE FEASIBILITY STUDY  
ON  
THE LHUNTSHI AND MONGAR  
INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

Dasho C.Dorji : Deputy Minister, Planning Commission  
Dasho Khandu Wangchuk : Director General, DOA  
Mr. Sherub Tenzin : Deputy Secretary, Home Ministry  
Mr. Keylzang Tshering : Irrigation Engineer, DOA  
Mr. Chado Tenzin : Planning Officer, DOA  
Miss Neelam Lama : Planning Officer, Planning Commission

Mr. T. Yamazaki : Team Leader, JICA Study Team  
Mr. C. Takahashi : JICA Study Team  
Mr. T. Kajimoto : JICA Study Team  
Mr. N. Morioka : JICA Study Team  
Mr. Y. Fukasaka : JICA Study Team  
Mr. M. Iwaki : JICA Study Team



MINUTES OF MEETING  
ON  
THE DRAFT FINAL REPORT  
ON  
THE LHUNTSHI AND MONGAR INTEGRATED  
AGRICULTURAL DEVELOPMENT PROJECT

1. Date : November 18, 1988
2. Place : Department of Agriculture
3. Present : See attached list
4. Summary of Discussion:

The Director General of Agriculture welcomed Mr. T. Tujimóto of JICA, the members of the JICA Study Team and the representatives of the various departments of the Royal Government to the meeting. After briefly explaining the purpose of the meeting the Director General requested Mr. Yamazaki, Team Leader of the JICA Study Team to present the Report.

The presentation by the Team Leader was followed by discussions out of which the following salient points emerged:

1. The Draft Final Report submitted to the Royal Government on 16th November 1988 was in principle accepted by the members of the meeting as it was in keeping with the agreements reached during earlier meetings.
2. It was agreed that the Royal Government would send its comments, if any, on the Draft Final Report to JICA through diplomatic channels within one month after receipt of the report to facilitate finalisation.

*Dasho Khandu Wangchuk*

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Dasho Khandu Wangchuk  
Director General  
Department of Agriculture  
Ministry of Agriculture  
Royal Government of Bhutan

*Takayoshi Yamazaki*

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Takayoshi Yamazaki  
Team Leader  
Jica Study Team



## LIST OF PARTICIPANTS

SUBJECT : DRAFT FINAL REPORT OF LHUNTSHI/MONGAR PROJECT.

DATE AND TIME : 88.11.18 1000 HOURS

PLACE: DIRECTOR GENERAL'S CHAMBER

NO.	NAME	POSITION
1.	DASHO KHANDU WANGCHUK	: DIRECTOR GENERAL, DEPARTMENT OF AGRICULTURE
2.	MR M.P SHERMA	: JOINT DIRECTOR BUDGET & ACCOUNTS
3.	MR. PEM L. DORJI	: CHIEF PLANNING OFFICER, DEPARTMENT OF AGRICULTURE
4.	MISS N. LAMA	: ASSISTANT PLANNING OFFICER, PLANNING COMMISSION
5.	MR SANGYE DORJI	: ASSISTANT PLANNING OFFICER, HOME MINISTRY
6.	MR. MANI THAPA	: ASSISTANT PLANNING OFFICER, MINISTRY OF AGRICULTURE
7.	MR. CHADD TNEZING	: PLANNING OFFICER, DEPARTMENT OF AGRICULTURE
8.	MR. KAYLZANG TSHERING	: ASSISTANT ENGINEER, DEPARTMENT OF AGRICULTURE

### JICA TEAM

1.	MR. T. TUJIMOTO	: COORDINATOR, JICA
2.	MR. T. YAMAZAKI	: TEAM LEADER, JICA STUDY TEAM
3.	MR. C. TAKAHASHI	: JICA STUDY TEAM

**MEMBER LIST OF COUNTERPARTS CONCERNED  
AND  
JICA STUDY TEAM**

Counterpart Personnel

Dasho Khandu Wangchuk	Director General, DOA
Mr. Tshering Dorji	Joint Director (Irrigation), DOA
Mr. D.B.Rai	Assistant Director of Agriculture, DOA
Mr. L.B.Rai	Engineer, Irrigation, DOA
Mr. Chado Tenzin	Planning Officer, DOA
Mr. Kaylzung Tshering	Assistant Irrigation Engineer, DOA

Personnel Concerned

Dasho C. Dorji	Deputy Minister, Planning Commission
Dasho Dago Tshering	Deputy Minister, Home affair
Mr. Sherub Tenzin	Deputy secretary, Home affair
Mr. Pem Dorji	Joint Director (Planning), DOA
Mr. Thubten Norbu	Joint Director (Administration/Account), DOA
Mr. Kinley Tshering	Deputy Managing Director, FCB

Mongar Dzongkhag

Dasho Gsay Lhendup	Dzongdag (District Administrator)
Mr. Karchung Tshering	Dzongrab (Assistant Dzongdag)
Mr. Dhanapati Dhungyell	District Agricultural
Mr. Sangay Dorji	District Engineer
Mr. Rinching Tshering	Agri. Supervisor (Salling)
Mr. Nima Wezer	Agri. Supervisor (Mongar)
Mr. Purnanda Dhital	Agri. Supervisor (Mushroom)
Mr. Danbar Rai	Agri. Supervisor (Yangbari)
Mr. L. N. Sharma	Agri. Supervisor (Chakaling)
Mr. Nidu Prasad Sharma	Agri. Supervisor (Chaskhar)

Lhuntshi Dzongkhag

Dasho Pemba Gyeltshen	Dzongdag (District Administrator)
Mr. Pradhun	District Agricultural Officer
Mr. Sonam Tshering	District Engineer
Mr. Sonam Gyeltshen	Agri. Inspector
Mr. D. P. Sharma	Agri. Inspector (Gangzoor)
Mr. Sangye Khandu	Agri. Extension Worker (Tangmachhu)
Mr. Tenzin Wondi	Agri. Extension Worker (Menji)
Mr. Kezang Phutso	Gup, Tangmachhu

JICA Study Team

Takayosi YAMAZAKI	Team Leader
Chikaichi TAKAHASHI	Irrigation and Drainage Engineer
Teruo KAJIMOTO	Hydrologist
Tatsuhiko SHINODA	Agronomist (Home work only)
Naoto MORIOKA	Pedologist
Yuichi FUKASAKA	Agricultural Economist
Masahiro IWAKI	Design Engineer





JICA

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