a. Sustainment of farm productivity,
b. Increase of farmers' income,
c. Social change.

(4) Technical advices needed by DLD in order to establish the land use method are ;

a. Arranging guidlines for survey and land use planning of farm level,
b. How to make a feasibility study,
c. Study of soil erosion,
d. Arranging guidelines of planning criteria for land and water conservation fcilities,
e. Formulation of standard and design of land and water conservation works,
f. Arranging guidelines of construction and cost estimation for land and water conservation works,
g. Arranging cropping system and crop diversification for land and water consevation,
h. Giving advice on system analysis, GIS (Geographical Information System) and MIS (Management Information System) for planning and design for land and water conservation,
i. Arranging curricula and technical manuals for training courses,

(5) Knowledge expected by DLD to be transferred

a. Appropriate land and water conservation techniques
b. Technical guidance, manuals,and advices for being transferred to DLD staff
c. Computer network system for data collection and analysis,planning and design etc.

2. Considerations for the Project activities

(1) The plan of the farmer's participation to the pilot projects is ;

a. To organize farmer's meetings to have exchange of ideas, experiences and to get full participation of farmer in mapping out the appropriate plan which can be carried out by the farmers themselves
b. To establish pilot project in the area where soil erosion problem is critical and farmers in that area are willing to help solve the problem
c. To provide farmers with training in soil and water conservation practices

(2) The plan of the expenses of the pilot project's cost

Thai budget will be allocated under the project entitled "Soil and Water Conservation in the East" for the construction of infrastructure, soil and water conservation system as well as the provision of new crop varieties recommended by DLD. In 1992 and 1993 additional budget can be gained from the source of soil and water conservation activity which is a main activity of DLD.

(3) The plan of the management and implementation of the pilot Project

The plan of implementation of the pilot project is ;

a. Planning for land and water conservation
b. Design for land and water conservation
c. Design of cropping system
d. System analysis for land and water conservation
e. Training of personnel and farmers concerning land and water conservation

The pilot projects will be administered and implemented by the working group of Soil and Water Conservattion in the East project, chaired by Director of Land Development Regional Office (LDRO II).

The DLD budget and the tentative implementation plan of the pilot projects are shown in attached table-1.

3. Role to be expected by DLD to JICA Agronomy Expert

a. How to draw up manuals of soil-water-crop management for farmers
b. How to conduct research and monitoring of pilot project as well as collecting and analyzing data for the drawing of soil-water-crop management
manuals which will later be transferred to other areas in the eastern region.
c. How to prepare handbook on soil-water-crop management, cropping system and benefit to be derived in accordance with soil series (classified by DLD) in the eastern region for being distributed to farmers
d. How to prepare technical books and curricula for the training of government officials concerned and farmers.

4. Necessity of Japanese system engineer

(1) System analyst will assist DLD personnel to look into the requirement for

planning, design and information on soil and water conservation works and particularly problems associated with the collection, processing or storage of that information.

(2) System analyst, then has to design a system to meet with those requirements.

(3) Creation of a computer system to support the chosen design.

5. The relation between the Project's targets and the role of Japanese system engineer

Japanese system engineer will work with the users (DLD officers) to specify the information requirements of LWCC and with supplies of hardware and software in order to operate a system conforming to those requirements. Training DLD officers would also be needed.

6. DLD's training program and the contents

(1) Training provided is for government officials concerned and farmers' leaders in the field of soil and water conservation. Annual budget under land and water conservation activity has regularly been allocated to this training program.

(2) Training for government officialls concerned has been handled by Personnel Division, DLD HQ, in the eastern region. A number of 150 officials has been trained in 1992.

(3) Training for farmers' leaders are under the control of Land Development Regional Offices and Land Development Stations, a total of 1,850 farmers leaders in the East region will participate in the training program in 1993

Contents of the training program for government officials concerned are;

-Knowledge in soil deterioration
-Prevention and solution of soil erosion problem by means of vegetative method
-Prevention and solution of soil erosion problem by means of mechanical method
-Soil improvement and increase of farm productivity

-Water management on farm level
-Soil and water conservation system planning
-Transfer of technology to target group

7. The time of commencement of the Project

LWCC will be commenced as soon as possible. The reason is that the first pilot project has already been started in CS-No3 (Chachoengsao). Data collected from the pilot project to be used in LWCC should be supervised by JICA experts.

8. Present status of the Project

(1) The grant aid equipment are now being used at the construction site CS-No -3 in Chachoengsao province.

(2) Two garages are planned to keep all the equipment (grant aid) provided by JICA. One garage has already been built and the other garage is starting to constru ct and it will be established till end of May 1993.

(3) One workshop is also starting to construct and, it will be also established
till end of May 1993.

(4) DLD's organization and plan of the Project management in future aspect.

In order to promote the land and water conservation project in whole Thailand, principles of DLD network structure are as follows.

a. LWCC to be established during 1993-1998 will serve as a typical pattern of Land and Water Conservation Center at regional level. The function of the center is to collect and develop data to be used in land and water conservation practices at provincial- district-sub-district-village or farm levels.

Data of mapping in different scales, satellite data, GIS, MIS and others would be stored at DLD Computer Center. Computer configuration is shown in attached sheet. DLD main computer system involves SUN, SPARC, and SERVER 630.

b. DLD Computer Center aims to retrieve and store data, to create database and distribute diskett to different divisions in DLD HQ., all Land Develo pment Regional Offices as well as other agencies concerned. Such function will help lessening the overlap of data collection.

c. Land and Water Conservation Center to be established under LWCC would be a typical model of other Land and Water Conservation centers scheduling to be founded in all Land Development Regional Offices and Land Development Stations.

d. LWCC to be set up in DLD HQ. will serve as a Land and Water Conservation Center where all data in the field of land and water conservation will be stored and distributed to all divisions in DLD HQ., Land Development Regi onal Offices and Land Development Stations throughout the country.

e. Land Development Stations will use the data derived from DLD HQ. in the operation of their field activities.

(5) The situation of LWCC for the eastern region in DLD

Model of LWCC in the East will be reproduced in other regions nationwide.

(6) The Organization Chart and the personnel arrangement of LWCC for the Eastern Region is shown in attached tables

(7) The menmbers (Thai side) of the Joint Committee for the Project

1) Chairman

Director General of the Department of Land Development

2) Thai side

a. Deputy Director General
b. Project Manager of LWCC
c. Director of Planning Division
d. Director of Soil and Water Conservation Division
e. Director of Engineering Division
f. Director of Soil Survey and Land Classification Division
g. Director of Land Use Planning
h. Director of Survey and Cartographic Division
i. Director of Personnel Division
j. Director of Soil Analysis Division
k. Director of Land Development Regional Office II
l. Representative of DTEC
m. Representative of Budget Bureau
n. Representative of DOAE
o. Representative of DOA

p. Other Officials appointed by the Chairman, if necessary

Annex-1-1/3

List of Attendants

A. Department of Land Development (DLD)

1. Mr. Boonyaruk Suebsiri	Deputy Director General (Chairman)
2. Mr. Padege Kanchanakul	Director of LDRO II
3. Mr. Upatham Potisuwan	Director of Soil & Water Conservation Division
4. Mr. Sampop Chantaramanee	Chief of Soil & Water Conservation Section, Soil & Water Conservation Division
5. Mr. Manu Srikhajon	Chief of Watershed Management Sub-section, Soil & Water Conservation Division
6. Mr. Sutham Paladsongkram	Chief of Soil & Water Conservation Sub-section, Soil & Water Conservation Division
7. Mr. Ard Somrang	Director of Planning Division
8. Ms. Bhatra Chindanon	Chief of Foreign Relations Section, Planning Division
9. Mr. Kasem Thongpan	Chief of Information System Section, Planning Division
10. Ms. Phachongchit Boonyarach	Chief of Planning Sub-section, Planning Division
11. Mrs. Waraporn Boonsorn	Staff of Foreign Relations Section, Planning Division
12. Mr. Anant Sukwiwat	Chief of Equipment Engineer Section, Engineering Division
13. Mr. Narong Atsilarat	Chief of Technical Section, Engineering Division

14. Mr. Chaiyaporn Wachirakornwattana	Chief of Technical Engineering Sub-section, Engineering Division
15. Mrs. Wannarat Thothong	Chief of Technical Section, Surveying & Cartographic Division
16. Mr. Paiboon Pramojanee	Chief of Geology Section, Soil Survey & Classification Division
17. Mr. Taweesak Viensiip	Chief of Data Base System Section, Soil Survey & Classification Division
18. Mr. Udom Poolsawat	Chief of Soil Survey Classification and Land Use Planning Section, LDRO II
19. Mr. Pornchai Suthathorn	Chief of Technical Section, LDRO II
20. Mr. Sophon Chancharoensook	Chief of Land Development Station Chachoengsao, LDRO II
21. Mr. Chumpol Phawaphootanond	Chief of Land Development Station Chon Buri, LDRO II
22. Mr. Lertchai Poolporn	Chief of Land Development Station Rayong, LDRO II
23. Mr. Paisarn Thosawad	Chief of Land Development Station Prachin Buri, LDRO II
24. Mr. Chawin Choemsuwan	Chief of Land Development Station Chantha Buri, LDRO II
25. Mr. Seri Tanchanpong	Director of Personnel Division
26. Mr. Sophon Chomcharn	Director of LDRO X
27. Mr. Phongpiya Piyasirananda	Chief of Personnel Development Section, Personnel Division
28. Mr. Chawalit Choowong	Staff of Civil Work Section, Engineering Division
29. Ms. Kittima Trowattana	Staff of Planning Division

B. Authorities Concerned

1. Mr. Montree Rumakom	Director General of Department of Agriculture (DOA)
2. Mr. Pramote Suwanmongkol	Head of Production Group, Chachoengsao Rubber Research Center, DOA
3. Ms. Darunee Kosaisaevee	Head of Technical Section, - ditto -
4. Mr. Petcharat Wannapee	Deputy Director General, Department of Agricultural Extension (DOAE)
5. Mr. Surapong Pransilapa	Director of Provincial Agricultural Extension Office, Rayong Province, DOAE

C. JICA Long - Term Survey Team

1. Mr. Jimpei ISHIZAKA	Team Leader and Planning
2. Mr. Masaichi OSHIRO	Farm Management and Cultivation
3. Mr. Takahiro MORITA	Cooperation Planning

D. Others

1. Mr. Junji YOKOKURA	Assistant Resident Representative, JICA Thailand Office
2. Mr. Hiroyasu KOBAYASHI	JICA Expert attached to DLD

Annex 2- 1/2

TENTATIVE SCHEDULE OF IMPLEMENTATION
(Draft)

I. Japanese Assistance

Item	1993	1994	1995	1996	1997	1998	Total
I. Experts (Long-term Assignment)							
1. Team-Leader	———						
2. Coordinater	———						
3. Engineer for Land and Water Conservation (Planning and Design)	———						
4. Engineer for Land and Water Conservation (Construction and Monitoring)	———						
5. Agronomy (Cultivation and Farming)	———						
II. Experts (Short-term Assignment) System Engineering, Socio-Economy, Training, and Others if necessary	- - -						
III. Machinery and Equipment	———						
IV. Training Acceptance	——— Several persons ———						
V. Local Cost Assistance							

Annex 2-2/2

Ⅱ. Thai Responsibylities

Item	1993	1994	1995	1996	1997	1998	Total
Ⅰ. Counterparts							
1. Project Manager/Director							
2. Counterpart Engineers							
a. Engineers For Land and Water Conservation (Planning and Design)							
b. Engineers For Land and Water Conservation (Construction and Monitoring)							
c. Agronomy (Cultivation and Farming)							
d. Short Term Expert							
Ⅱ. Administrative Pesonnel							
1. Clerical Personnel							
2. Service Employees, Operators and Labourers							
3. Others							
Ⅲ. Setting up Office spaces							
Ⅳ. Office Facilities (Table, Desk, Shelf, etc.)		Sufficient					
Ⅴ. Running Cost (Wages, Expenses for Telephone, Electricity, Fuel and Installation of Iquipment, etc)		Sufficient					
Ⅵ. Training		Sufficient					
Ⅶ. Others							
Ⅷ. Total							

Annex 3-1/2

TENTATIVE SCHEDULE OF IMPLEMENTATION OF ACTIVITIES

Activities	1993	1994	1995	1996	1997	1998
I. Preparation and examination of techical criteria in the field of land and water conservation activities						
1. Preparation of basic planning and design criteria						
2. Collecting data and improving system of analysis						
3. Application and examination of prepared criteria to pilot farm activities						
II. Monitoring land and water conservation project						
1. Standardization of construction and supervision for land and the water conservation works						
2. Application and display of prepared standardized cost estimation and supervision techniques to pilot activities						
3. Standardization of method of project managemet						
4. Monitoring and survey on construction work, effects of construction works andfarming and economy for land and water conservation works						
III. Preparing manual and display of farming and agricultural land management in the field of the land and water conservation						

Annex-3-2/2

Activities	1993	1994	1995	1996	1997	1998
1. Selection of cultivation and farming techniques effecting the land and water conservation						
2. Preparation of basic manual for cultivation, farming and land management						
3. Application and display of the prepared manual to pilot activities						
IV. Training for land and water conservation						
1. Formulation of training plan						
2. Preparing teaching materials						
3. Conduct of training program						

Tentative necessary request for LWCC machinery, equipment and tools

Item	Unit	Remarks
I Research equipment		
1. Full set of soil and water analysis equipment	1	
2. Full set of rainfall simulater and Portable alluminium plot with angle adjustable by hydrolic power with 1 Pick up truck 4 x 4	10	
3. Full set of weight lysimeter	16	
4. Full set of portable lysimeter	16	
5. Full set of neutron probe moisture meter	5	
6. Full set of soil physics analysis equipment	5	
7. Full set of automatic rainfall recorder	5	
8. Full set of portable spectrophotometer	8	
9. Full set of portable soil fertility analysis equipment with 1 microbus (mobile unit)	1	
10. Bulldozer D3	1	
11. Pick up truck 4 x 2	1	
12. Others if necessary		
II Survey, Planning and design equipment		
1. Set of electronic theodolite	5	
2. Blue printing machine	3	
3. GPS (Global Positioning Survey)	5	
4. Adjust table	6	
5. Tape (metal)	9	
6. Levelling	6	

Item	Unit	Remarks
7. Staff	10	
8. Copy machine	2	
9. Large Format Dry System Plain Paper Copying Machine	2	
10. Camera	1	
11. Pick up truck (Double Cap)	3	
III Improving system of analysis		
(Computer system)		
1. Micro - computer (16 MB RAM) (Hard Disk 207 MB Floppy Disk Drive 1.2 MB, 1.44 MB) 1280x1024 color)	3	
2. Micro - computer (2 MB RAM Hard Disk 120 MB Floppy Disk Drive 1.2 MB, 1.44 MB)	7	
3. Digitizer 24" x 36"	3	
4. Plotter A1 size	3	
5. Printer (Dot matrix)	10	
6. Laser Jet Printer	2	
7. Interfacing		
7.1 Ethernet	1	
7.2 Modem	8	
8. Software (PC ARC/INFO, ERDAS/and Auto CAD release 12)	3	GIS and Image analysis system
9. UPS (Uninterrupted Power Supply)	10	1 KVA = 7 3 KVA = 3
10. Scanner colour image (A4 size 300 dpi resolution zoom 50 - 200%)	2	

Item	Unit	Remarks
11. Desktop Electronic Filing Unit with File print (A3 size (11x17") 512 MB disk (13,000 pages) with laser beam non impact monochrome printer)	2	
12. VIDEO Projector (1,280x1,024 resolution super VGA with 6x8 feet screen	2	
13. Computer projection (LCD 2197 colours 640x480 resolution)	2	
14. Others if necessary		
IV Training equipment		
1. Full set of audio visual aids (Video camera, Video play, TV, camera, slide projector, overhead projector, microphone, amplifier etc.)	8	
2. Operation room material and equipment	2	
3. Mobile training equipment with microbus	2	
4. Copy machine	7	
5. Duplicating machine	7	
6. Electric typewriter (Thai-English)	3	
7. Air-conditioner	4	
8. Faxcimile	7	
9. Bus (40-45 seats) with audio visual aids	2	
10. Pick up truck 4x2	1	
11. Others		

Item	Unit	Remarks
V Office equipment and vehicle		
1. Air - conditioner	2	
2. Copy machine	2	
3. Duplicating machine	1	
4. Minibus (20-30 seats) with audio visual aids	2	
5. Microbus (12 seats)	4	
6. Car	3	
7. Pick up truck 4x4	1	
8. Others if necessary		
VI Construction machinery and equipment		
1. Dump truck	6	
2. Electric generator and trailer (20 KVA)	2	
3. Others (tents etc.)		

Annex-5

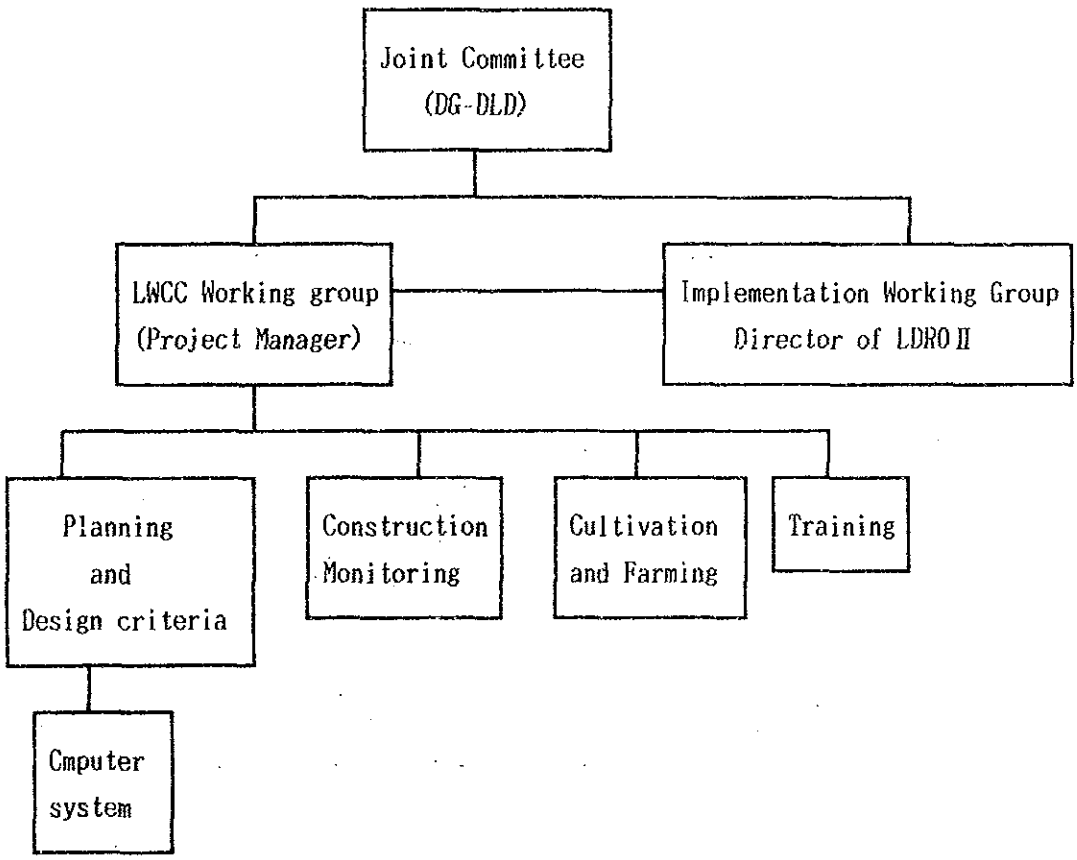
Tentative DLD's Counterparts for LWCC

Japanese Expert	DLD's Counterpart	
	HQ	LDRO II
Long term expert		
1. Team leader	1. Deputy Director-General 2. Director, Planning Div.	1. Director, LDRO II
2. Coordinator	1. Rep. of Planning Div.	1. Director, LDRO II
3. Planing and design criteria	1. Rep. of Soil and Water Cons. Div. 2. Rep. of Engineering Div. 3. Rep. of Land Use Planning Div. 4. Rep. of Soil Survey and Class. Div. 5. Rep. of Cartographic and Mapping Div. 6. Rep. of Planning Div.	1. Rep. of Soil Survey and Land Use Planning Sec. 2. Rep. of Technical Sec.
4. Construction and monitoring	1. Rep. of Engineering Div. 2. Rep. of Soil and Water Cons. Div. 3. Rep. of Planning Div.	1.Rep of Soil Survey and Land Use Planning Sec 2. Rep. of Technical
5. Cultivation and farming	1. Rep. of Soil and Water Cons. Div. 2. Rep. of Soil Analysis Div.	1. Rep. of Technical Sec.
Short term expert		
1. System Engineering	1. Rep. of Planning Div. 2. Rep. of Soil and Water Cons. Div. 3. Rep. of Soil Survey and Class. Div.	1. Rep. of Technical Sec.
2. Socio-economy	1. Rep. of Land Use Planning Div.	1. Rep. of Soil Survey and Land Use Planning Sec.
3. Training	1. Rep. of Personnel Div. 2. Rep. of Soil and Water Cons. Div. 3. Rep. of Planning Div.	1. Rep. of Technical Sec.

Remark ; Rep. of each division can be more than 1 person

Annex-6

Organization Chart of Joint Committee



Annex-7

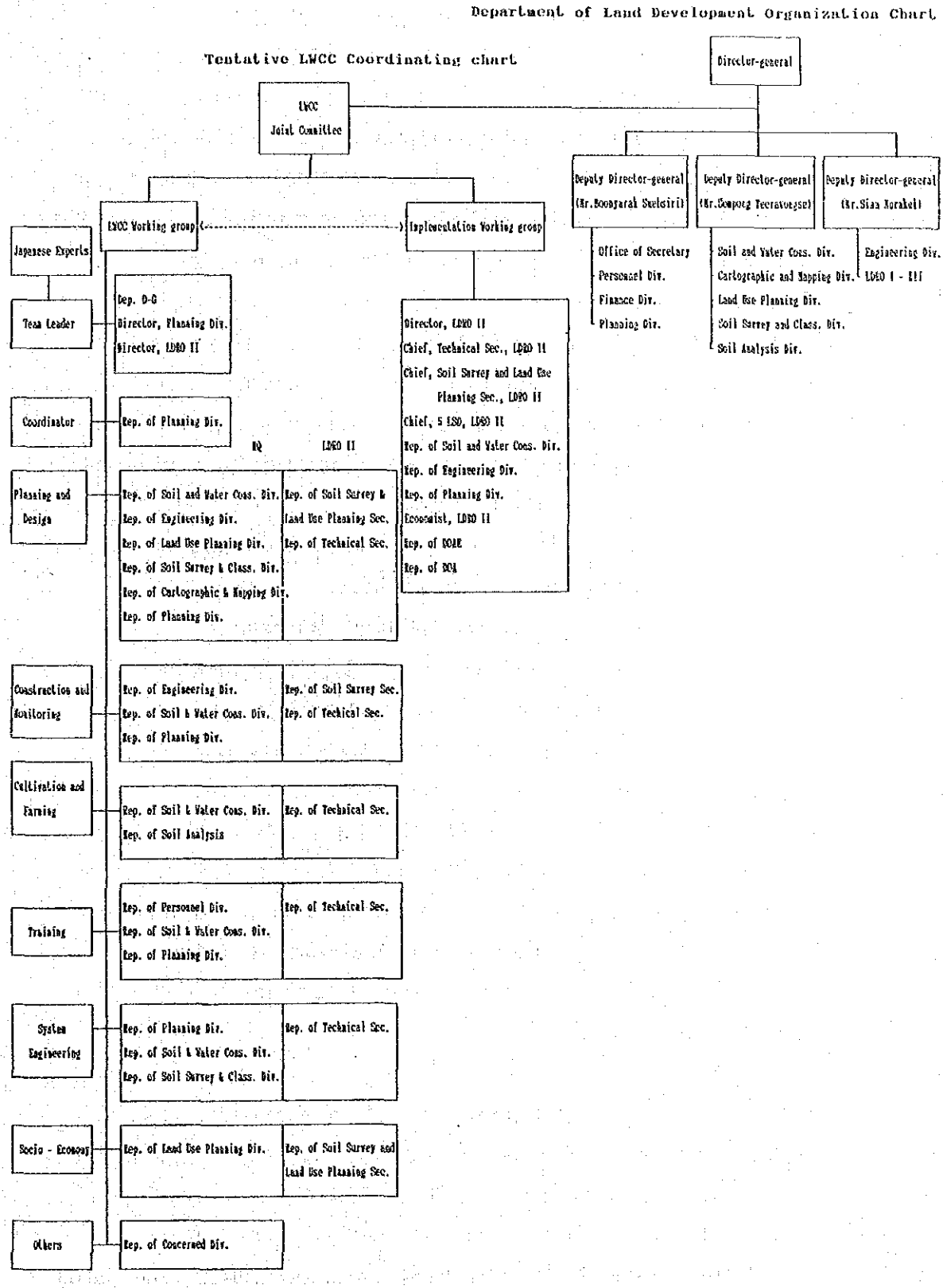
Attached Table 1. DLD Budget allocation

Year	Soil and Water Conservation in the East Project	Soil and Water Conservation Activity	Million Baht Total
1992	6.5	2.2	8.7
1993	11.3	14.4	25.7
1994	30.3		30.3
1995	30.5		30.5
1996	29.3		29.3
1997	7.1		7.1
Total	115.0	16.6	131.6

Attached Table 2. Implementation plan of the pilot project

Activities	Unit	1992	1993	1994	1995	1996	1997	1998	Total
1.Construction of garage for heavy equipment	garage	1	-	-	-	-	-		1
2.Construction of workshop for heavy equipment	Workshop	1	-	-	-	-	-		1
3.Feasibility study on the pilot project	site	4	4	4	4	-	-		16
4.Survey and design in advance	site	2	4	5	5	-	-		16
5.Construction of pilot project 1st.yr.	site	1	3	4	4	4	-		16
2nd.yr.	site	-	1	3	4	4	4		16
6.Reseearch & monitoring	project	-	4	(4)4	(4)4	(4)4	(4)4		16
7.LWCC	project	-	1	(1)	(1)	(1)	(1)		1
8.Maintenance of Equip.	times	12	(12)	(12)	(12)	(12)	(12)		12
9.Coordination work	times	10	10	10	10	10	10		60

Annex-8


Department of Land Development Organization Chart
Tentative LWCC Coordinating chart
Director-general
LWCC
Joint Committee
Deputy Director-general
(Mr.Boonyarat Sueksiri)
Deputy Director-general
(Mr.Somporg Teeravongsa)
Deputy Director-general
(Mr.Siam Norakul)
LWCC Working group
Implementation Working group
Japanese Experts
Office of Secretary
Personnel Div.
Finance Div.
Planning Div.
Soil and Water Cons. Div.
Cartographic and Mapping Div.
Land Use Planning Div.
Soil Survey and Class. Div.
Soil Analysis Div.
Engineering Div.
LDEO I - III
Team Leader
Dep. D-G
Director, Planning Div.
Director, LDEO II
Director, LDEO II
Chief, Technical Sec., LDEO II
Chief, Soil Survey and Land Use Planning Sec., LDEO II
Chief, 5 LSO, LDEO II
Rep. of Soil and Water Cons. Div.
Rep. of Engineering Div.
Rep. of Planning Div.
Economist, LDEO II
Rep. of BOAE
Rep. of BOA
Coordinator
Rep. of Planning Div.
Planning and Design
Rep. of Soil and Water Cons. Div.
Rep. of Engineering Div.
Rep. of Land Use Planning Div.
Rep. of Soil Survey & Class. Div.
Rep. of Cartographic & Mapping Div.
Rep. of Planning Div.
Rep. of Soil Survey & Land Use Planning Sec.
Rep. of Technical Sec.
Construction and Monitoring
Rep. of Engineering Div.
Rep. of Soil & Water Cons. Div.
Rep. of Planning Div.
Rep. of Soil Survey Sec.
Rep. of Technical Sec.
Cultivation and Farming
Rep. of Soil & Water Cons. Div.
Rep. of Soil Analysis
Rep. of Technical Sec.
Training
Rep. of Personnel Div.
Rep. of Soil & Water Cons. Div.
Rep. of Planning Div.
Rep. of Technical Sec.
System Engineering
Rep. of Planning Div.
Rep. of Soil & Water Cons. Div.
Rep. of Soil Survey & Class. Div.
Rep. of Technical Sec.
Socio - Economy
Rep. of Land Use Planning Div.
Rep. of Soil Survey and Land Use Planning Sec.
Others
Rep. of Concerned Div.

Annex-9-1

LWCC Organization Chart

1. LWCC Joint Committee

This Committee is chaired by the Director-General of Department of Land Development with the Director of Planning Division serving as the Secretary of the Committee. Membership of the Joint Committee is as fallows:

Thai

1. Director-General of DLD
2. Deputy Director-General of DLD
   (Project Manager of LWCC)
3. Director of Planning Division
4. Director of Soil and Water Conservation Division
5. Director of Engineering Division
6. Director of Soil Survey and Classification Division
7. Director of Land Use Planning Division
8. Director of Cartographic and Mapping Division
9. Director of Personnel Division
10. Director of Soil Analysis Division
11. Director of LDRO II
12. Rep. of DTEC
13. Rep. of Budget Bureau
14. Rep. of DOAE
15. Rep. of DOA
16. Others official appointed by the Chairman, if necessary

Japanese

1. Team Leader
2. Coordinator
3. Planning and Design Expert
4. Construction and Monitoring Expert
5. Cultivation and Farming Expert
6. Rep. of JICA
7. N.B. Officials of the Embassy of Japan may attend the Joint Committee as observers

The power and duties of the Joint Committee include

1. To formulate the policy on Land and Water Conservation Center Project.

2. To control the operation of the Land and Water Conservation Center Project.

3. To approve the operational and financial plans.

4. To appoint specific task group as necessary.

2. LWCC Working Group.

This Working Group is chaired by the Deputy Director-General, with the Director of Planning Division serving as the Secretary. Membership of the Working Group is as fallows:

Thai

1. Deputy Director-General
2. Director of Planning Division
3. Director of LDRO II
4. Rep. of LDRO II
5. Rep. of Planning Division
6. Rep. of Land Use Planning Division
7. Rep. of Soil and Water Conservation Division
8. Rep. of Engineering Division
9. Rep. of Soil Survey & Classification Division
10. Rep. of Cartographic and Mapping Division
11. Rep. of Personnel Division
12. Rep. of Soil Analysis Division

Japanese

1. Team Leader
2. Coordinator
3. Planning and Design Expert
4. Construction and Monitoring Expert
5. Cultivation and Farming Expert

The duties of the LWCC working group include

(1) To prepare the operational and financial plans.

(2) To monitor the operational plan.

(3) To work as coordinating body between Thai officers and Japanese Experts.

(4) To formulate the criteria for land and water conservation in the pilot areas.

(5) To carry out any other assignments prescribed by the Joint Committee

3. Implementation Working Group

This Working Group is chaired by the Director of Land Development Regional Office II, with Chief of Soil Survey and Land Use Planning Section, LDRO II serving as the Secretary. Membership of the Working Group is as follows:

1. Director LDRO II
2. Chief, Soil Survey and Land Use Planning, LDRO II
3. Chief, Technology LDRO II
4. Chief, 5 LDS (Chonburi, Rayong, Chachaengsao, Chantaburi and Prachinburi)
5. Rep. of Soil and Water Conservation Division
6. Rep. of Engineering Division
7. Rep. of Planning Division
8. Economist, LDRO II
9. Rep. of DOAE
10. Rep. of DOA

The duties of the Implementation Working Group include

1. To prepare the detailed operational plans for the 16 pilot projects.

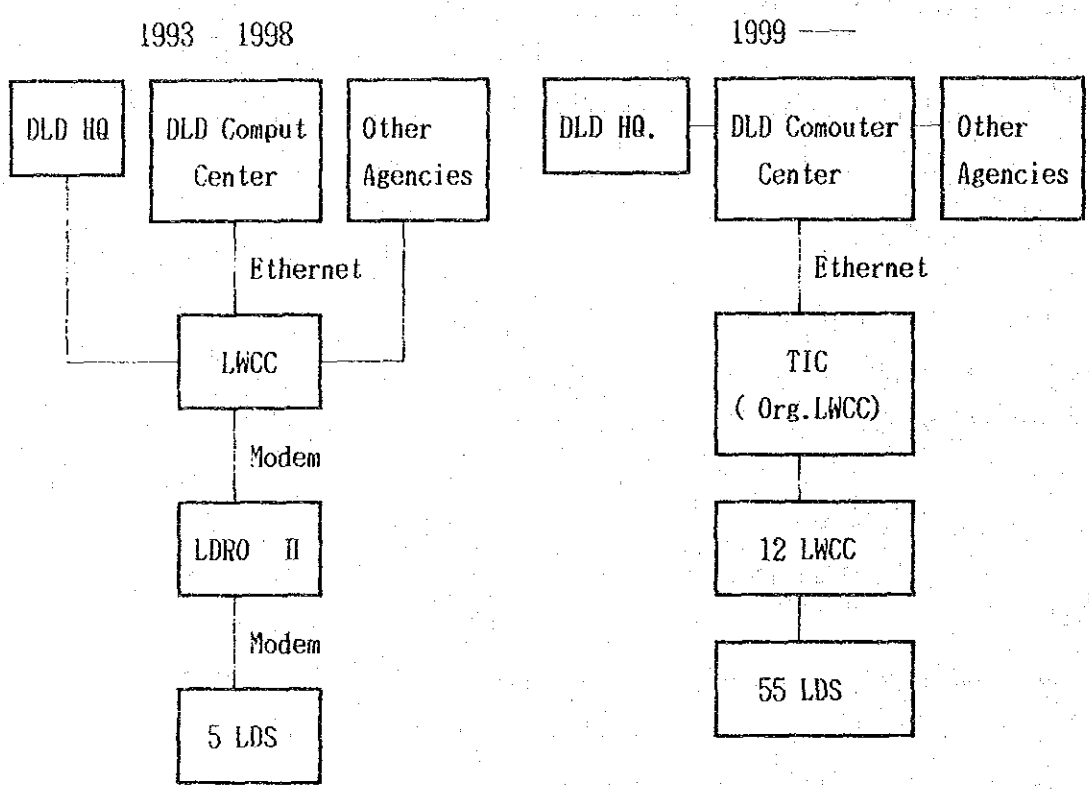
2. To carry out the selecting, surveying, designing and construction for the 16 pilot areas.

3. To assess the impacts from Land and Water Conservation Project in the 16 pilot areas.

4. To report the progress of the project acivities to the Joint Committee every two months.

Annex－10

Computer Configuration in DLD



Annex-11-1

16 Pilot Areas

Pilot Area	New Area	Construction year
CHACHOENGSAO		
CS-NO3		1992 - 1993
CS-NO4		1994
CS-NO5		/
CS-NO8		/
CHONBURI		
CN-NO1		x
CN-NO2		x
CN-NO4		x
CN-NO8		x
CN-NO9		x
	Nong Yai	1993
	Hang Soong	
	B.Noen Si	
RAYONG		
RY-NO1		1993
RY-NO2		x
RY-NO3		x
RY-NO8		x
RY-NO9		x
CHANTHABURI		
CT-NO2		1993
CT-NO3		x
PRACHINBURI	Wattana Nakorn	1994
	Nongtakaennon	
	B.Mai Thai Pattana	

(注) (1) ×は、JICA・F/Sによる選定地区の内、実施不可能を示す。

(2) /は、JICA・F/Sによる選定地区の内、現在地区の農民と交渉中であることを示す。

(3) New Areaとして2地区挙げられているが、Regional Office Ⅱでは現在各県から3地区（トラット県は1地区）の計16地区をパイロット事業として着手することとして調査・計画中である。

Annex-11-2

New Areas

province Description	CHONBURI	PRACHINBURI
1. General		
1) Location	Nong Yai Hang Soong B.Nong Si	Wattana Nakorn Nongtakaennon B.Mai Thai pattana
2) Area (ha)	336	593.6
3) Watershed (km^2)		
4) Average annual rainfall (mm.)	1,336.9	1,396.3
2. Agricultural condition		
1) Major crops	Cassava, Sugar cane	Cassava, Bamboo, Rice
3. Physical Condition		
1) Topography	Undulating-Rolling (3-10%)	El 70 - 80 m.
2) Geology	-	Undulating (3-6%) Qt deposit
3) Eroded condition	Top	Top
4) Soil	Tayang	Korat,Roiet,Muok Lek
5) Transportation means	Earth road	Earth road
6) Water resources	-	-

Annex-11-3

province / Description	CHONBURI	PRACHINBURI
4. Social Condition		
1) Land right condition	Sor Kor 1	Economic forest
2) Number of landowners	10	15
3) Average land holding inside pilot area (rai)		
4) Major problem	Water shortage	Water shortage
5. Other		

THE LONG TERM SURVEY FOR TECHNICAL COOPERATION

FOR

THE LAND AND WATER CONSERVATION CENTER PROJECT IN THE EAST OF THAILAND

c/o JICA Headquarters, 2-1-1, Nishi-shinjuku, Shinjuku-ku, Tokyo, Japan

☎ 03-3346-5264

MEMBERS

Assignment	Name	Present Position
(1) Team Leader and Planning	Jinpei ISHIZAKA	Technical advisor, Agricultural Development Consultants Association
(2) Farm Management and Cultivation	Masaichi OSHIRO	Head of Sugar Cane Agronomy Division, Crops Department, Agriculture Research Station Okinawa Prefecture
(3) Cooperation Planning	Takahiro MORITA	Staff, Technical Cooperation Division, Agricultural Development Cooperation Department, JICA

1. Schedule of Team Members for LWCC Project

Sep.	29 (Tue)	17:10	Arrived at BKK from Japan
	30 (Wed)	9:00	Courtesy call on Embassy of Japan (EOJ) and JICA
		14:00	Courtesy call on DLD
Oct.	1 (Thu)	9:30	Meeting between the team and DLD in BKK Explanation of the aim of the survey. Discussion the draft of the Project activities and the framework prepared by the Japanese side
	2 (Fri)		Individual meeting with C/P
	3 (Sat)		Arrangement of data
	4 (Sun)		- ditto -
	5 (Mon)		Left BKK for Chonburi, Meeting at DLRO II
	6 (Tue)		Visited to the Provincial Agricultural Extension Office in Rayong (DOAE) Field survey of the pilot project area (RY-NO.1) observed FAO research project in Rayong Province
	7 (Wed)		Visited to the Chachoengsao Rubber Research Center (DOA) Field survey of the pilot project area (CS-NO.3) Returned to BKK
	8 (Thu)		Individual meeting with C/P
		13:30	Courtesy call on DOA and DOAE in BKK
	9 (Fri)	14:00	Meeting between the team and DLD in BKK
	10 (Sat)	11:00	Mr. Morita left BKK for Japan
	11 (Sun)		Preparing the report
	12 (Mon)		Meeting between the team and DLD
	13 (Tue)		- ditto -
	14 (Wed)		Making the report
	15 (Thu)		Explained the report to DLD
	16 (Fri)	10:00	Submitted the report to DLD
		15:00	Report to EOJ, JICA
	17 (Sat)	11:00	Mr. Ishizaka and Mr. Oshiro leave BKK for Japan (TG-640)

附属資料 2.　ＰＣＭ手法による協議資料

問題系図

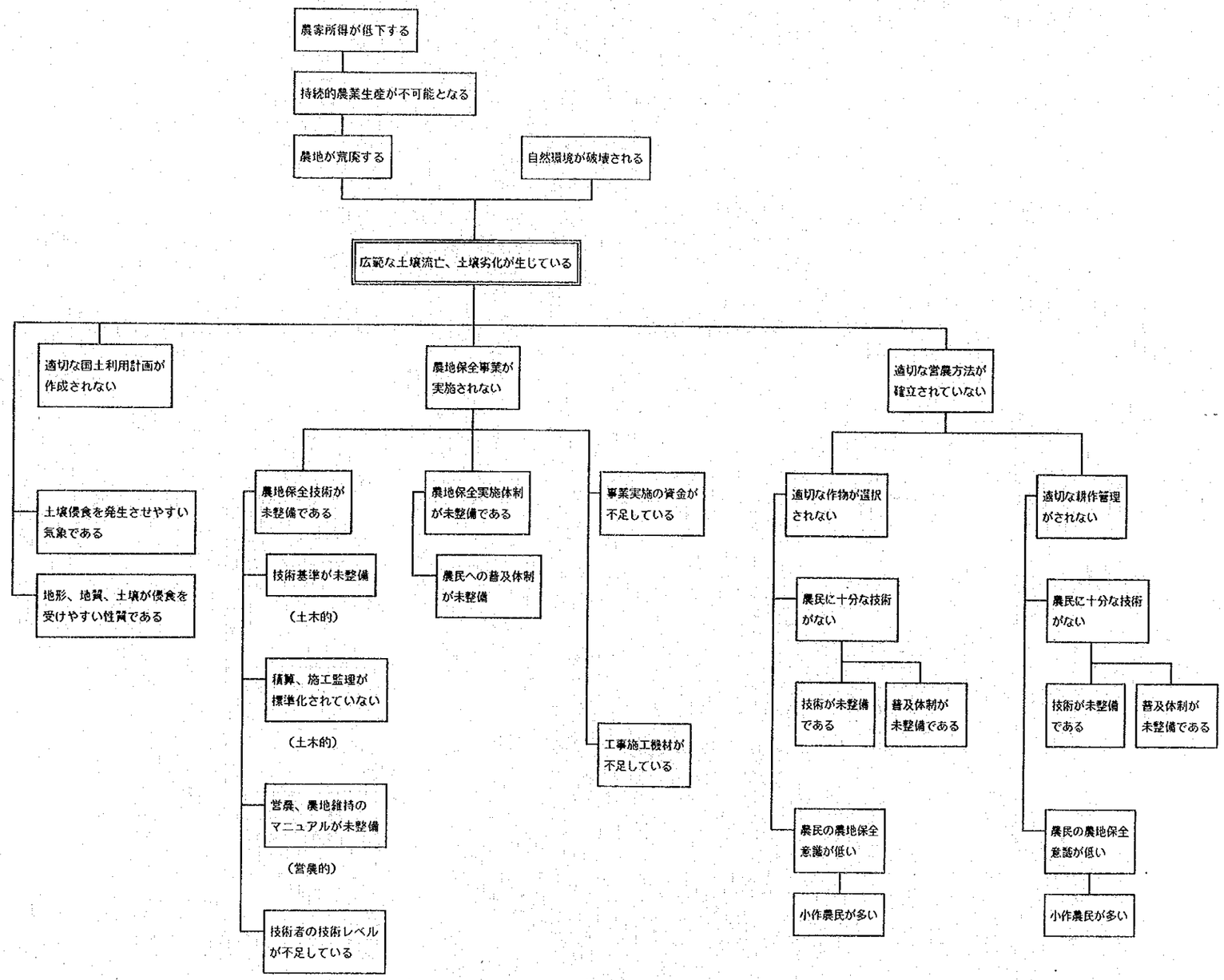
影響

↓

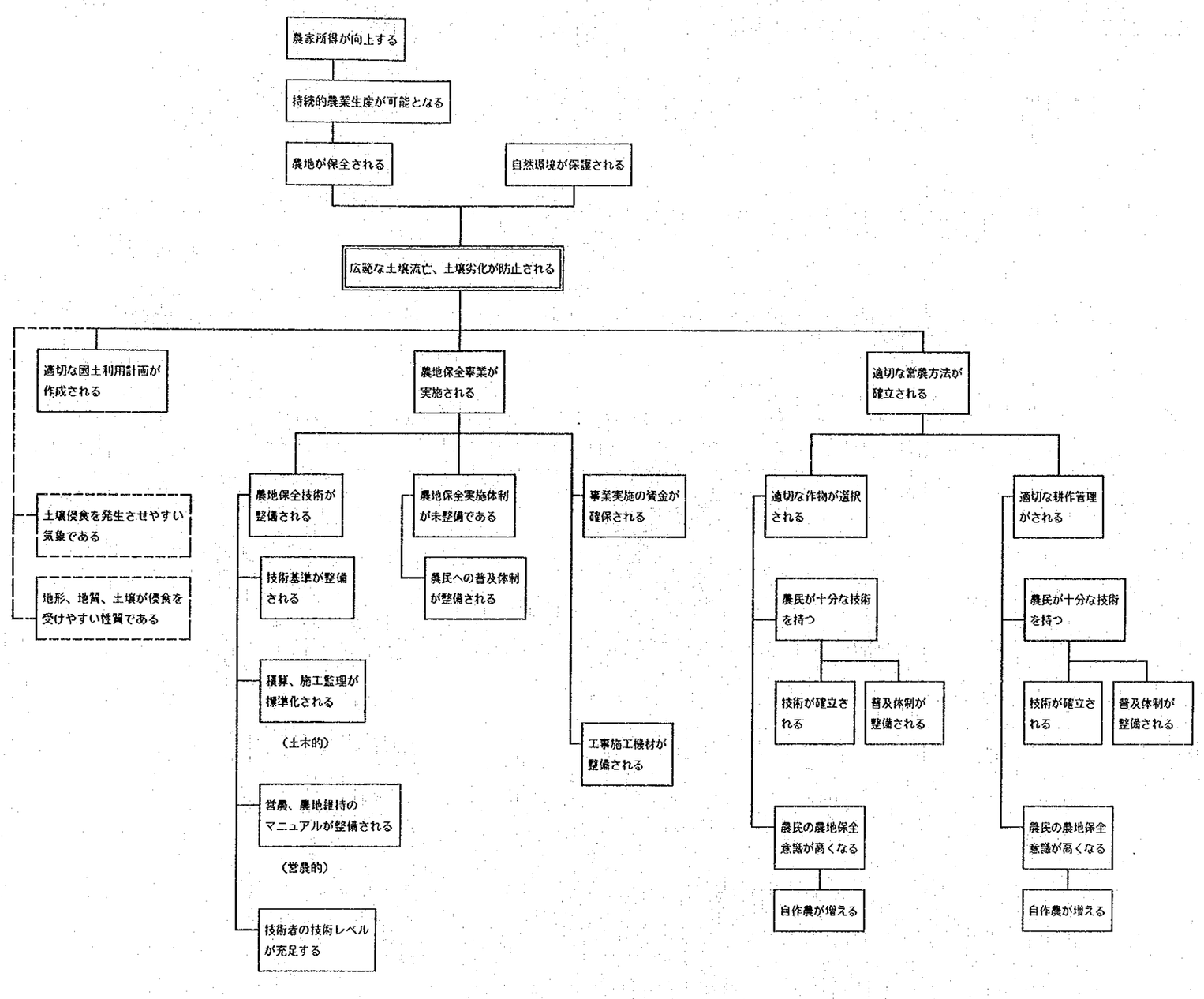
中心問題

↓

原因



目的系図


農家所得が向上する
持続的農業生産が可能となる
農地が保全される
自然環境が保護される
広範な土壌流亡、土壌劣化が防止される
適切な国土利用計画が作成される
農地保全事業が実施される
適切な営農方法が確立される
土壌侵食を発生させやすい気象である
地形、地質、土壌が侵食を受けやすい性質である
農地保全技術が整備される
農地保全実施体制が未整備である
事業実施の資金が確保される
技術基準が整備される
農民への普及体制が整備される
積算、施工監理が標準化される
（土木的）
営農、農地維持のマニュアルが整備される
（営農的）
技術者の技術レベルが充足する
工事施工機材が整備される
適切な作物が選択される
適切な耕作管理がされる
農民が十分な技術を持つ
技術が確立される
普及体制が整備される
農民の農地保全意識が高くなる
自作農が増える
農民が十分な技術を持つ
技術が確立される
普及体制が整備される
農民の農地保全意識が高くなる
自作農が増える

プロジェクトデザインマトリックス
（要請ベース）

プロジェクトの要約 (Narrative Summary)	指　標 (Verifiable Indicators)	指標データ入手手段 (Means of Verification)	外　部　条　件 (Important Assumptions)
★SUPER GOAL			
Ⅰ. 上位目標			
Ⅱ. プロジェクト目標 ①土壌侵食地帯における適正な農地・保全技術の確立 ②及び農家所得の増加を図るための適切な農地利用方法の導入。			
Ⅲ. 成果			
Ⅳ. 活動 1. 農地・水保全事業に関する情報の収集 2. 農地水保全技術基準の作成 3. 技術研修の実施 4. 農地・水保全計画の作成 ・東部タイの長期及び年次開発計画の作成 ・年次工事の設計 ・パイロットファームの建設 5. 施設機械の維持管理	Ⅴ. 投入 日　本　側 1. 専門家派遣　　2. 研修員受入 ①チームリーダー　　不明 ②業務調整 ③農地・水保全 ④農地開発 ⑤栽培 ⑥システム開発エンジニア 3. 機材供与 ・バス3台　・マイクロバス5台　・土壌分析装置1式 ・セオドライト4台　・オーディオビジュアルセット6台 ・オフセット印刷機4台 ・マイクロコンピューター（40MB3台、130MB 2台） ・図化セット5台　・事務機器 ・その他実験計測器具　計3，500万B 4. ローカルコスト負担 不明 5. その他 無償資金協力：主要機材は以下の通り 1．ブルドーザー220HP　2台 2．〃　90HP　4台 3．バックホー　2台 4．トラクター　80HP　6台 5．ダンプトラック　6トン　6台 6．フラットベッドトラック　20トン　1台 7．ローダー　110HP　2台 8．グレーダー　145HP　2台 9．クレーン　5トン　1台 10．タンクトラック　6000リットル　2台 11．ピックアップ　4輪駆動　2台 12．ピックアップ　8台 13．修理用トラック　1台 14．ホイールコンパクター　9輪　2台　等	タ　イ　側 1. マンパワー ・DLDバンコク本部及び第2地方事務所（チョンブリ）職員がプロジェクト実施の責任を負う。 ・第2地方事務所は以下の組織を統括する。 －総務課 －技術課 －土壌調査土地分級課 －チョンブリ県土地開発ステーション －ラヨン県土地開発ステーション －チャンタブリ県土地開発ステーション －プラチンブリ県土地開発ステーション 2. タイ側の経費負担 ・農地水管理プログラムの中の運営、維持管理、公共部分	前　提　条　件

プロジェクトデザインマトリックス
（事前調査結果）

プロジェクトの要約 (Narrative Summary)	指　　標 (Verifiable Indicators)	指標データ入手手段 (Means of Verification)	外　部　条　件 (Important Assumptions)
★SUPER GOAL			
Ⅰ．上位目標			
Ⅱ．プロジェクト目標 ①適切な農地水保全技術を確立し、ＤＬＤ職員に対して技術の移転を行うとともに ②東部タイ地域の農業振興と環境保全に寄与することを目的とする。			
Ⅲ．成果			
Ⅳ．活動 1. 情報の収集及び分析 2. 東部タイの農地・水保全事業実施のための計画、設計、施工基準の作成（土地利用、栽培体系、作物栽培を含む） 3. パイロットプロジェクトでの農地・水保全技術の実証、展示 4. 研修（研修コースの計画及び教材、技術資機材の作成）	Ⅴ．投入 日　本　側 1. 専門家派遣 ①チームリーダー ②業務調整 ③農地・水保全技術者（計画） ④農地・水保全技術者（設計） ⑤栽培 ⑥システムエンジニア…検討中 2. 研修員受入　　4. ローカルコスト負担 年間5名以下　　不明 3. 機材供与（予算の範囲内で検討） ・バス3台　・マイクロバス5台　・土壌分析装置1式 ・セオドライト4台　・オーディオビジュアルセット6台 ・オフセット印刷機4台 ・マイクロコンピューター（40MB3台、130MB 2台） ・図化セット5台　・事務機器 ・その他実験計測器具　計3，500万B 5. その他 無償資金協力：主要機材は以下の通り 1．ブルドーザー220HP　2台 2．〃　90HP　4台 3．バックホー　2台 4．トラクター　80HP　6台 5．ダンプトラック　6トン　6台 6．フラッドベッドトラック　20トン　1台 7．ローダー　110HP　2台 8．グレーダー　145HP　2台 9．クレーン　5トン　1台 10．タンクトラック　6000リットル　2台 11．ピックアップ　4輪駆動　2台 12．ピックアップ　8台 13．修理用トラック　1台 14．ホイールコンパクター　9輪　2台　等	タ　イ　側 1. カウンターパートの配置 ①プロジェクト運営 ・副局長 ・チョンブリ事務所長他1名 ②土壌水保全関係 ・土壌水保全部長 ・土壌水保全課長 ・地質課長 ・印刷課長 ・チョンブリ事務所土壌調査土地利用計画課長 ③設計基準関係 ・技術部技術課長 ・技術部技術工学係長 ・ため池管理係長 ④栽培関係 ・土壌水保全係長 ・チョンブリ事務所技術課長 ⑤システム開発関係 ・計画部長 ・計画部情報システム課長 ・土壌調査分級部データベースシステム課長 ・土地利用計画部代表 ⑥研修 ・計画部行政課長 ・人事部代表 2. 投資 ①プロジェクト事務所の設置 3. 運営費 ①プロジェクト事務所 ②パイロットプロジェクトの設計・建設費 ③その他通常のプロ技のスキームに基づくもの	
			前　提　条　件

プロジェクトデザインマトリックス
（実施案）

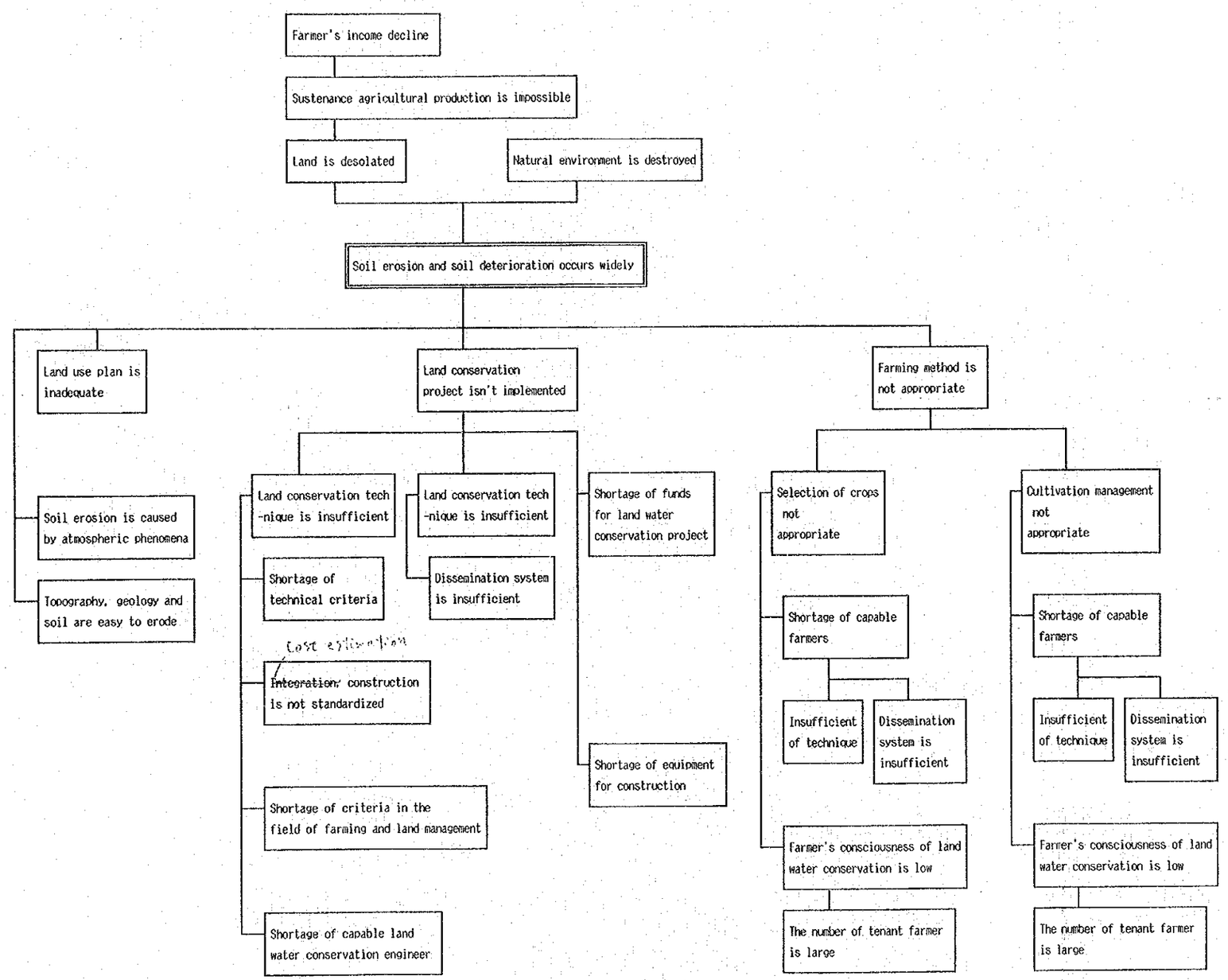
プロジェクトの要約 (Narrative Summary)	指　　標 (Verifiable Indicators)	指標データ入手手段 (Means of Verification)	外　部　条　件 (Important Assumptions)
★SUPER GOAL 東部タイ地域における広範な土壌流亡を防止し、持続的な農業生産システムに貢献する。			
Ⅰ．上位目標 確立された技術に基づき東部タイ地域で農地水保全事業が広範に実施される。	東部タイ地域全域で独自に実施された農地・水保全事業の数及び事業内容、農地・水保全効果	調査団派遣または在外事務所によるプロジェクトの事後評価	①政策変更がない ②財政が悪化しない ③農地水保全技術者が定着する
Ⅱ．プロジェクト目標 ①農地水保全事業の調査・計画・設計・積算・施工・営農・農地維持の分野で技術基準、マニュアル等が独自で改訂、発展される。 ②持続的に良質な農地水保全技術者が訓練される。 ③適正な農地水保全事業が他のパイロット地区で独自に実施される。	※協力終了後、以下の成果が達成される。 ①技術基準、マニュアル等の独自の改訂、発展 ②自助努力による研修の持続 ③独自に実施された農地・水保全パイロット事業の数、事業内容、農地・水保全効果	調査団派遣または在外事務所によるプロジェクトの事後評価	①財政が悪化しない ②農地水保全技術者が定着する
Ⅲ．成果 ①農地水保全事業の調査・計画・設計・積算・施工・営農・農地維持の分野で技術基準、マニュアル等が整備される。 ②同上分野で農地水保全技術者が訓練される。 ③農地水保全技術が協力対象パイロット地区で実証展示される。	①分野ごとの技術基準、マニュアルの数、内容 ②分野ごとに訓練された農地水保全技術者数、研修成果、研修後の配属状況 ③パイロット事業実施地区の数、事業内容、農地・水保全効果	①最終成果 ②研修実績及び研修生追跡調査 ③最終成果	①財政が悪化しない ②農地水保全技術者が定着する
Ⅳ．活動 1. 農地・水保全事業に関する技術基準の作成、検証 (1) 基本的な計画基準、設計基準の作成 (2) 農地・水保全に関する情報収集、分析システムの改善 (3) 作成された基準のパイロットファーム事業への適用、検証 2. 農地・水保全事業に関わる積算・施工監理の標準化 (1) 積算の標準化 (2) 施工監理の標準化 (3) 標準化された積算、施工監理技術のパイロット事業への適用、演示 3. 農地・水保全に関わる営農・農地維持管理マニュアルの作成、演示 (1) 農地・水保全に効果的な栽培・営農技術の選定 (2) 基本的な栽培・営農・農地維持管理マニュアルの作成 (3) 作成されたマニュアルのパイロット事業への適用、演示 4. 農地・水保全に関わる研修の実施 (1) 研修教材の作成 (2) 研修計画の立案	Ⅴ．投入 日　本　側 1. 専門家派遣 ①チームリーダー ②業務調整 ③計画・設計基準 ④積算・施工 ⑤栽培・営農 2. 研修員受入 年間3～4名 3. 機材供与 必要に応じ供与 （調査用機器、情報処理機器、車両等） 4. ローカルコスト負担 研修費用等 （パイロットファームの設計、建設はタイ側予算で実施する） 5. その他 無償資金協力：主要機材は以下の通り 1. ブルドーザー220HP　2台 2. 〃　90HP　4台 3. バックホー　2台 4. トラクター　80HP　6台 5. ダンプトラック　6トン　6台 6. フラットベッドトラック　20トン　1台 7. ローダー　110HP　2台 8. グレーダー　145HP　2台 9. クレーン　5トン　1台 10. タンクトラック　6000リットル　2台 11. ピックアップ　4輪駆動　2台 12. ピックアップ　8台 13. 修理用トラック　1台 14. ホイールコンパクター　9輪　2台　等	タ　イ　側 1. カウンターパートの配置 ①プロジェクト運営 ・副局長 ・チョンブリ事務所長他1名 ②土壌水保全関係 ・土壌水保全部長 ・土壌水保全課長 ・地質課長 ・印刷課長 ・チョンブリ事務所土壌調査土地利用計画課長 ③設計基準関係 ・技術部技術課長 ・技術部技術工学係長 ・ため池管理係長 ④栽培関係 ・土壌水保全係長 ・チョンブリ事務所技術課長 ⑤システム開発関係 ・計画部長 ・計画部情報システム課長 ・土壌調査分級部データベースシステム課長 ・土地利用計画部代表 ⑥研修 ・計画部行政課長 ・人事部代表 2. 投資 ①プロジェクト事務所の設置 3. 運営費 ①プロジェクト事務所 ②パイロットプロジェクトの設計・建設費 ③その他通常のプロ技のスキームに基づくもの	①財政が悪化しない ②カウンターパートが異動しない ③治安が悪化しない 前　提　条　件 ①農地・水保全センターがDLDの組織上、明確に位置付けられる。 ②営農を担当する政府関係機関の協力が得られる。 ③必要なカウンターパートの配置、予算手当がなされる。

PROBLEM CHART

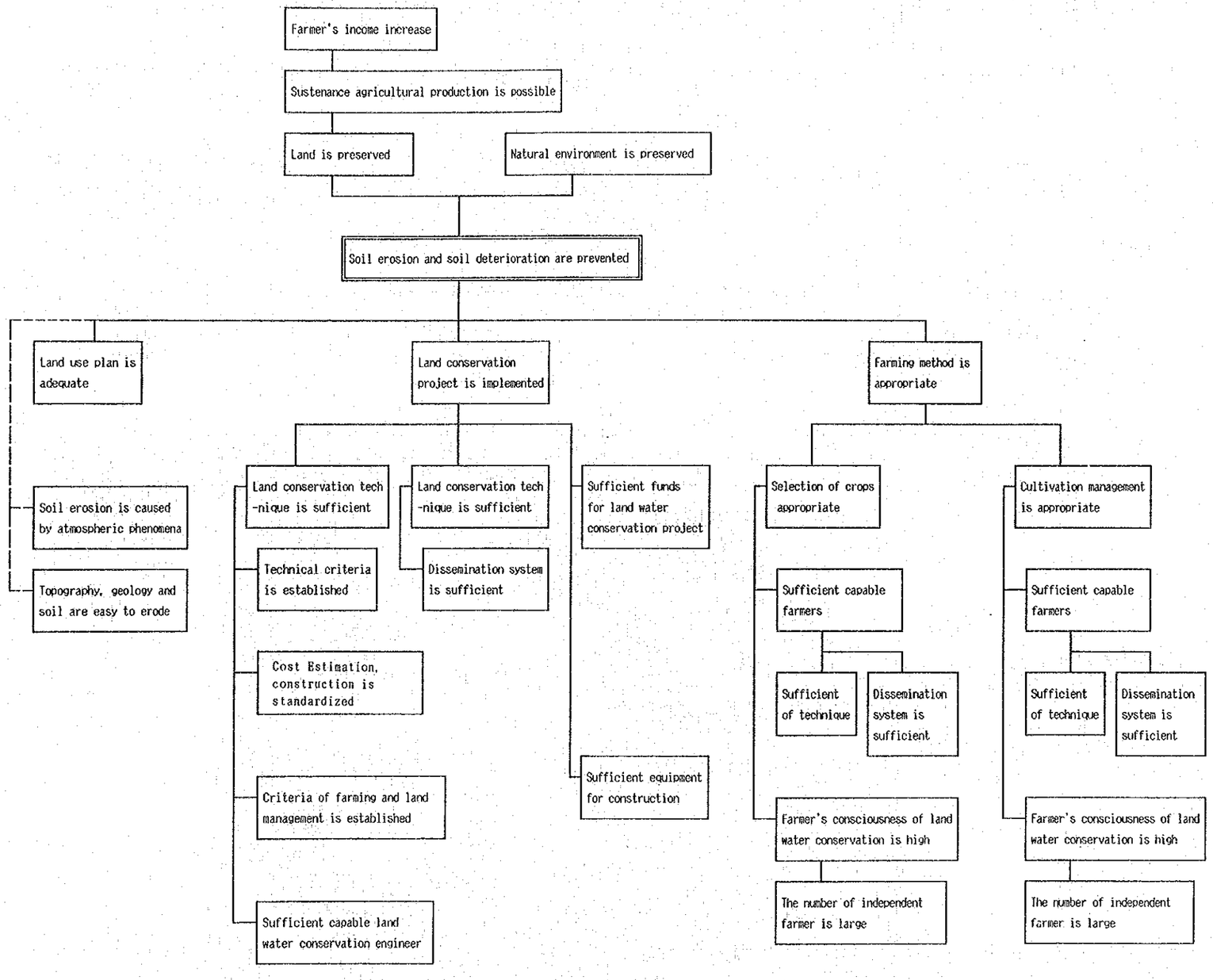
INFLUENCE

CORE PROBLEM

FACTOR



OBJECTIVE CHART



PROJECT DESIGN MATRIX
(PROPOSAL)

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
★SUPER GOAL			
I. GOAL			
II. PROJECT PURPOSE ①To establish appropriate land conservation technology in soil erosion area. ②To introduce appropriate land use method to increase farmers' income			
III. OUTPUT			
IV. ACTIVITIES 1. Collecting data in the filed of land water conservation activity 2. Preparation of technology criteria in the field of land water conservation 3. Training for technology 4. Preparation of land water conservation plan ①Preparation of long term/annual development plan in east Thai ②Designing of annual construction ③Construction of pilot farm 5. Maintenance of equipment for construction	V. INPUT		PRE-CONDITIONS

JAPANESE SIDE	THAI SIDE
1. Expert ①Team Leader ②Coordinator ③Land water conservation ④Land development ⑤Agronomy ⑥System development engineer 2. Acceptance of Thai Personnel for Training in Japan --- 3. Provision of Equipment ·bus 3unit ·microbus 5units ·theodolite 4units ·soil analysis equipment 1set ·audio visual set 6sets ·offset printing machine 4units ·micro-computer (40MB 3sets, 130MB 2sets) ·mapping equipment 5sets ·others TOTAL 35,000,000,B 4. Local cost expenditure --- 5. Others Grant aid : Main equipment are as follows; 1. Bulldozer 220HP 2Unit 2. 〃 90HP 4Unit 3. Hydraulic Excavator 2Unit 4. Farm tractor 80HP 6Unit 5. Rear dump truck 6tons 6Unit 6. Flat Bed 20tons 1Unit 7. Wheel Loader 110HP 2Unit 8. Motor grader 145HP 2Unit 9. Overhead crane 5tons 1Unit 10. Water tank truck 6000liters 2Unit 11. Pick up truck 4×4 2Unit 12. Pick up truck 8Unit 13. Maintenance truck 1Unit 14. Wheel compacter 2Unit etc.	1. Manpower ·Officers from the DLD Bangkok Head Office and Land Development Regional Office 2 (Chon Buri) will be responsible for the implementation of the Project. ·Land Development Regional Office 2 will be in charge of and oversee the following units; - General Administration Section - Technical Section - Soil Survey and Land Classification Section - Chon Buri Province Land Development Station - Rayong Province Land Development Station - Chachoengsao Province Land Development Station - Chantaburi Province Land Development Station - Prachinburi Province Land Development Station 2. Thai Counterpart Funds ·The Operation, maintenance and public utility cost of Land and Water Management Programme

PROJECT DESIGN MATRIX
(THE RESULT OF PRELIMINARY SURVEY)

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
★SUPER GOAL			
I. GOAL			
II. PROJECT PURPOSE ①To establish appropriate land and water conservation techniques and to transfer of those techniques mainly to the staff of OLD ②To contribute to the development of agriculture and to the conservation of general environment in the East of Thailand			
III. OUTPUT			
IV. ACTIVITIES 1. Information collection and data analysis 2. Making of criteria on planning, design and construction for the Land and Water Conservation Project in the East of Thailand (including land use, cropping pattern, crop cultivation) 3. Verification and demonstration of the land and water conservation techniques at the pilot project area 4. Training (Planning of training courses, and preparation of curriculum and technique material)	V. INPUT		

JAPANESE SIDE	THAI SIDE
1. Expert ①Team Leader ②Coordinator ③Engineer for land and water conservation (planning) ④Engineer for land and water conservation (design) ⑤Agronomist ⑥System development engineer (under consideration) 2. Acceptance of Thai Personnel for Training in Japan --- 3. Provision of Equipment (within budgetary limitation) ·bus 3unit ·microbus 5units ·theodolite 4units ·soil analysis equipment 1set ·audio visual set 6sets ·offset printing machine 4units ·micro-computer (40MB 3sets, 130MB 2sets) ·mapping equipment 5sets ·others TOTAL 35,000,000.B 4. Local cost expenditure --- 5. Others Grant aid : Main equipment are as follows; 1. Bulldozer 220HP 2Unit 2. 〃 90HP 4Unit 3. Hydraulic Excavator 2Unit 4. Farm tractor 80HP 6Unit 5. Rear dump truck 6tons 6Unit 6. Flat Bed 20tons 1Unit 7. Wheel Loader 110HP 2Unit 8. Motor grader 145HP 2Unit 9. Overhead crane 5tons 1Unit 10. Water tank truck 6000liters 2Unit 11. Pick up truck 4×4 2Unit 12. Pick up truck 8Unit 13. Maintenance truck 1Unit 14. Wheel compacter 2Unit etc.	1. Counterpart ①Project Administration ·Deputy Director in DLD ·Director of LDRO II and one others ②Land and Water Conservation ·Director of soil and water conservation ·Chief of soil and water conservation section ·Chief of Geology section ·Chief of Cartography section ·Chief of soil survey and land use planning section, LDRO II ③Design Criteria ·Chief of technical section, Engineering Div. ·Chief of Technical Engineering Sub-section, Engineering Division ·Chief of watershed management Sub-section ④Agronomist ·Chief of Soil and Water Conservation Sub-section ·Chief of Technical Section, LDROII ⑤System Development ·Director of Planning Div. ·Chief of Information System Section, Planning Div. ·Chief of Data Base System Section, Soil Survey and Classification ·Rep. from Land Use Planning Div. ⑥Training ·Chief of Administration section, Planning Div. ·Rep. from Land Use Planning Div. 2. Investment ①Building for Project Office 3. Running Expenses ①Project Office ②Design and Construction expenses for pilot project ③Others based on ordinary scheme of Project-type technical cooperation

PRE-CONDITIONS

PROJECT DESIGN MATRIX
(IMPLEMENTATION)

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
★SUPER GOAL To prevent widespread soil erosion in east Thai region, and contribute to sustainable agricultural production system			
I. GOAL To implement Land and Water Conservation activity in east Thai widely based on established technique	The number, contents and effect of land and water conservation activities originally implemented in east Thai	Results of post-project evaluation conducted through dispatchment of study team or by JICA Office	①No policy change ②No deterioration of financial condition ③Staying land water conservation engineers with DLD for long
II. PROJECT PURPOSE ①Technical criteria and Manuals are originally improved and developed in the field of investigation, planning, design, integration, construction, farming and land conservation for Land and Water Conservation activity ②Capable Land and Water Conservation engineers sustenance trained ③Appropriate Land and Water Conservation activity is originally implemented in another pilot area	※After completion of the Project following output are attained ①Contents of originally improved or developed criteria and manuals ②Continuation of training originally ③The number, contents and effect of land and water conservation activities originally implemented	Results of post-project evaluation conducted through dispatchment of study team or by JICA Office	①No deterioration of financial condition ②Staying land water conservation engineers with DLD for long
III. OUTPUT ①Technical criteria and Manuals of Land and Water Conservation activity in the field of investigation, planning, design, integration, construction, farming and land conservation ②Training of Land and Water Conservation engineers in the same filed above ③Demonstration and display of Land and Water Conservation technique in the pilot area in the range of technical cooperation	①Contents, number and of criteria and manual prepared for objective technical fields ②Number, technical level and present position of land and water conservation engineers trained during the Project ③The number, contents and effect of land and water conservation activities originally implemented	①Project achievement ②Achivement of trainings and follow-up survey of trainees ③Final achievement of the Project	①No deterioration of financial condition ②Staying land water conservation engineers with DLD for long
IV. ACTIVITIES 1. Preparation and examination of technology criteria in the filed of land and water conservation activity (1)Preparation of basic planning, design criteria (2)Collecting data and improving analysis system in the field of land water conservation (3)Application and examination of prepared criteria to pilot farm activity 2. Standardization of ~~integration,~~ construction and supervision in the filed of land water conservation (1)Standardization of integration (2)Standardization of construction and supervision (3)Application and display of standardized integration, construction and supervision techniques to pilot activities 3. Preparing manual and display of farming and land management in the field of land water conservation (1)Selection of cultivation and farming technique effective for land water conservation (2)Preparation of basic manual in the filed of cultivation, farming and land management (3)Application and display prepared manual to pilot activities 4. Training for land water conservation (1)Preparing training materials (2)Formulate of training plan	V. INPUT		①No deterioration of financial condition ②Staying land water conservation engineers with DLD for long ③No security problem happens

V. INPUT

JAPANESE SIDE	THAI SIDE
1. Expert ①Team Leader ②Coordinator ③Planning and design criteria ④Integration and construction ⑤Cultivation and farming 2. Acceptance of Thai Personnel for Training in Japan Less than 5 persons per year 3. Provision of Equipment Necessary for the implementation of the Project (Equipment for investigation, data processing and vehicles etc,) 4. Local cost expenditure Expense for training, etc. (Design and construction of pilot farm are implemented by Thai budget) 5. Others Grant aid : Main equipment are as follows: 1. Bulldozer 220HP 2Unit 2. 〃 90HP 4Unit 3. Hydraulic Excavator 2Unit 4. Farm tractor 80HP 6Unit 5. Rear dump truck 6tons 6Unit 6. Flat Bed 20tons 1Unit 7. Wheel Loader 110HP 2Unit 8. Motor grader 145HP 2Unit 9. Overhead crane 5tons 1Unit 10. Water tank truck 6000liters 2Unit 11. Pick up truck 4×4 2Unit 12. Pick up truck 8Unit 13. Maintenance truck 1Unit 14. Wheel compacter 2Unit etc.	1. Counterpart ①Project Administration ・Deputy Director in DLD ・Director of LDRO II and one others ②Land and Water Conservation ・Director of soil and water conservation ・Chief of soil and water conservation section ・Chief of Geology section ・Chief of Cartography section ・Chief of soil survey and land use planning section, LDRO II ③Design Criteria ・Chief of technical section, Engineering Div. ・Chief of Technical Engineering Sub-section, Engineering Division ・Chief of watershed management Sub-section ④Agronomist ・Chief of Soil and Water Conservation Sub-section ・Chief of Technical Section, LDROII ⑤System Development ・Director of Planning Div. ・Chief of Information System Section, Planning Div. ・Chief of Data Base System Section, Soil Survey and Classification ・Rep. from Land Use Planning Div. ⑥Training ・Chief of Administration section, Planning Div. ・Rep. from Land Use Planning Div. 2. Investment ①Building for Project Office 3. Running Expenses ①Project Office ②Design and Construction expenses for pilot project ③Others based on ordinary scheme of Project-type technical cooperation

PRE-CONDITIONS

①Land water conservation center is defined clearly in the DLD organization
②Governmental organization in charge of farming cooperate with DLD
③Necessary numbers of counterparts and budget are assigned and allocated