Summary of Design Conditions

Name of Canal	Code	Command Area (ha)	Design Discharge (l's)	Required Head (m)
Upper Lobeysa	Cl	5	6	150
Lower Lobeysa	C2	27	28	- 20
Bajo	C9	23	24	20

Since the same benefit can be expected as that of irrigation canal improvement, only the project cost including the O/M cost of each counter measure should be compared.

H.5.2 Comparison of Basic Conditions

(1) Electrical Pump and Diesel Engine Pump

Applying the following conditions, the comparison of the pumping facilities cost including the O/M cost between that of electrical pump and diesel engine pump was studied as shown in the Data Book V.

_ : .	Design Discharge	15 1/9
-	Required Head	20 m

The results are summarized below and the diesel engine pump should be proposed to apply these system.

Summary of Comparison for Pumping Facilities Cost

		and the second second	(unit:1000Nii.)
Type of Pump	Electrical Pump	Diesel Engine Pump	: Remark
Pumping Facilities	579	404	
Electrical Distribution Facilities	370		
O M Cost	105	251	for 10 years
Total	1,053	655	

(2) Shallow Well System and River Pump System

Based on the same conditions mentioned above, the comparison of system cost including O/M cost between the shallow well and river pump was studied as shown in the Data Book V and the result is summarized below;

Summary of Comparison for the Water Supply System

and the second second			(unit:1000Nu.)
Type of Systems	Shallow Well	River Pump	Remark
Civil Works	355	220	
Pump Facilities	807	807	for 20 years
O M Cost	562	502	for 20 years
Total	1,665	1,530	

From the result of this comparison, the river pump system should be proposed.

H.5.3 Result of Alternative Study

Based on the design conditions, the river pump system was designed preliminarily as shown in the Data Book V. The project cost was also roughly estimated including the O/M cost.

(1) Upper Lobeysa (C1)

The project cost with the river pump system for the Upper Lobeysa is summarized below;

Summary of Project Cost of River Pump System

		(unit:1000No.)
Description	Amount	Remark
Civil Works	1,000	for 20 years
Pumping Facilities	4,786	for 20 years
O M Cost	4,018	for 20 years
Sub Total :	9,804	for 20 years
(for 1 year)	(490)	
		'
Water Management Cost	40	for 1 year
Total Project Cost	530	for 1 year

Since the net project cost of irrigation canal improvement was estimated as 35 thousand Nu. for I year, the improvement of irrigation canal should be proposed for the Upper Lobeysa.

(2) Lower Lobeysa (C2)

The project cost with the river pump system for the Lower Lobeysa is summarized below,

Summary of Project Cost of River Pump System

		(unit:1000Nu.)
Description	Amount	Remark
Civil Works	439	for 20 years
Pumping Facilities	1.196	for 20 years
O M Cost	1,004	for 20 years
Sub Total	2,639	for 20 years
(for 1 year)	(132)	
Water Management Cost	81	for 1 year
Total Project Cost	213	for 1 year

As the project cost of irrigation canal improvement was estimated as 132 thousand Nu for 1 year, the improvement of irrigation canal should be proposed for the Lower Lobeysa.

(3) Bajo (C9)

The project cost with the river pumping system for the Bajo is summarized below;

Summary of Project Cost of River Pump System

(unit:1000Nu.)

Description	Amount	Remark
Civil Works	439	for 20 years
Pumping Facilities		for 20 years
O M Cost	1,004	for 20 years
Sub Total		for 20 years
(for 1 year)	(132)	
Water Management Cost	84	for 1 year
Total Project Cost		for 1 year

As the project cost of irrigation canal improvement was estimated as 69 thousand Nu. for 1 year, the improvement of irrigation canal should be proposed for the Bajo.

H.6 Project Implementation Plan

11.6.1 Proposed Irrigation Improvement Plan

(1) For Short Term (Target Year 2002)

Based on the results of the above mentioned studies, the optimum combination of counter measures are summarized below,

- For low flat area
 Establishment of new water management system
 Rehabilitation of the Irrigation canal facilities and enforcement of the protection works
 Applying the double paddy cropping for 40% of present paddy field
- For high hilly area
 Establishment of new water management system
 Construction of offiake works
 Applying the diversification for 10% of present paddy field

The proposed irrigation improvement projects are summarized as shown below and the priority of the project was given considering the net B/C ratio.

Inventory of the Irrigation Improvement Project

Category of Land	Sub-Area	Name of Canal	Code	Conumand Area (ha)	Construction Cost (1600 Nu.)	OM Cost for Lycar (1900 Nu.)	Estimated B.C.Ratio	Priority
Low Flat	Lobeysa	Upper Lobeysa	CI.	61	1,152	21	1.25	(3)
Area .	100	Lower Lobeysa	C2 -	300	3,927	3.2	2.21	(3)
	Bajo	Вајо	C9	143	5,016	48	2 80	0
High Hilly	Phangyul	Phangvul	CIO	91	286	32	1 95	0
\rea		Gemkha	C15	15	. 47	12	1.53	. O
	Rubeysa	Nalakha	C18	29	119	· 15	1.57	©
		Rutekha	C19	40	207	10	1 18	3
1 1		Maçhekha	C20	27	148	9	1.59	o
		Naykoyuwa	C21	24	119	7	1.74	•
A Carlot and a constant		Rumina	C22	28	95	\$	1.91	②
Total				758	19,21€	216	**************************************	indicate and a

(2) For Long Term (Target Year 2007)

Based on the short term project, following projects were proposed.

- For low flat area
 Improvement of water management
 Applying the double paddy cropping for 100% of the present paddy field considering the rising up of food self sufficiency in Bhutan.
- For high hilly area
 Improvement of water management
 Research on the optimum diversification crop

It is not necessary to construct any kind of structure for these projects. The project cost should be required only for the research, which was estimated approximately as 500 thousand Nu./year.

H.6.2 Proposed Implementation Plan

(1) Proposed Implementation Schedule

Based on the priority of the project, the implementation schedule of the irrigation improvement plan was proposed as shown below considering the target year and total construction cost.

Proposed Implementation Schedule

Category	Sub-Area	Name of Canal	Code	Priority	,					Year		*	<u> </u>	<u> </u>	
of Land		1		1 1	1997	1998	1992	2000	200	2002	2003	2004	2005)	2006	200
ow Flat	Lobeysa	Upper Lobeysa	Ci	45				. 165	2.4X.70-5A	i	:		المناب المبالم		j
trea	1 11 2	Lower Lobeysa	C2	: (3)		196								أنيتا	
1	Bajo	Bajo	(3)	<u>(1</u>)	SERVICE PE			() j						. :	
igh Hilly	Thugui	Phangul	100	4]	BECKE SE	38		l	1.1.11			12			
rea .		Cemkhi	C15	₹.	1.1.	!		1		1.1					1
	Rubeysa	Nalakha	C18	- 6							1.1.50			_ :	
	}	Rutckha	C19	13:		10	2515750	1	1	İ					
34 G		Maphekha	C20	(\$1		1 . 1 .		SE-VISU			<u>.</u>		ļ		
		Naykoyuwa	C2L I	ı (İ			100000	ò	1	l		1			
		Rumina	C22	· Z		1402			1	<u> </u>	4.	1	<u> </u>	<u>:</u>	<u> </u>
	Research the	Optimum Diversifical	ion Crop		1			1	L	1	L				<u></u>

(2) Annual Disbursement Schedule

Based on the implementation schedule, the annual disbursement schedule of the project and O/M cost were estimated and summarized as shown below;

Proposed Disbursement Schedule for the Irrigation Improvement Project

			100						: . <u></u>			(unit .10	00 Nu)) ES MESERS
Calegory	Sub-Area	Name of Canal	Cede	Salar Albertan Co.			- PARTE - 114	*****	Year				·	<u> </u>
of Land				1997	1998	1992	2000	2001	2002	2003	2004	2005	2006	2007
Lew Flat	Lobeysa	Upper Lobeysa	CI				230	922				1		:
Area	1	Lower Lobeysa	C2 :		605	908	1,514							
	Вајо	Bajo	C3 ·	2,257	1.756	1,003								
ligh Hilly	Phogvul	Phogvul	Č10	257	- 29								· i	
Arca		Genikha	C15					47						
	Ruceysa :	Nalisha	C18				71	48				i.,		
	1	Rutckha	CIS	•	41	166						l . <u></u>		.1
	* :	Marhekha	C20.			15	133						.: }	
, ,	1	Naykoyuwa	C21	1		83	36					[i	
	1	Rumina	C55		95		1			er wet de Awa				
Research for the	e Optimum Di	versification Crop				487	437	487	487	487	487	487.		487
DECEMBER OF STREET	Andrews Don't	al Total	CONTRACTOR OF THE PERSON NAMED IN	2,515	2,526	2,662	2,471	1.593	487	487	487	497	487	-18

Proposed O/M Cost for the Irrigation Improvement Project

(unit: 1000 No.)

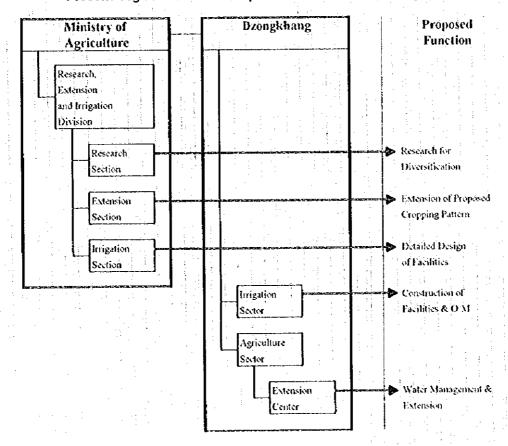
Calegory	Sub-Area	Name of Canal	Code						Year					<u> </u>
of Land				1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Low Flat	Lobeysa	Upper Lobeysa	C1					1.	21	21	- 21	21	21	21
Area		Louer Lobeysa	C2 .					32	32	33	32	32	32	32
1 .	Bajo	Bajo	C9				48	48	48	. 48	48	4\$	48	45
High Hilly	Phangyul	Phangyul	C10	-		58	58	58	58	58	58	58	58	58
Area	• "	Gemkha	C15						12	12	12	12	12	12
	Rubeysa	Nalakha	C18						15	15	15	15	15	15
		Rutekha	C19				10	- 10	lf.	10	10	10	10	10
·		Maphekha	C20				1	9	9	9	9	9	9	9
	:	Naykoyuwa	C21					7	7	7	7	. 7	7	7
		Rumina	C22			5	5	5	5	. 5	5	5	5	
	Annu	al Total		antaliar		62	120	168	216	216	216	316	216	210

(3) Proposed Organizations for the Project

Considering the characteristics and annual cost for the project, the project can be implemented by present organizations and it is not necessary to establish any kind of new organization.

The function of present organizations should be proposed as shown below;

Present Organization and Proposed Function for the Project



H.7 Drainage Improvement

H.7.1 Present Problems Identified

(1) General Characteristic of Drainage in the Study Area

At present, there are no systematic drainage canals under irrigation schemes in the Study Area. Farmers usually drain surplus water of the paddy field to lower terraced field or natural water course(gullies). The damage for crop caused by poor drainage was not found in the Study Area except at some wet lands in Phangyul.

As for direct runoff drainage from heavy rain, though the rainfall is drained to main rivers or tributaries, through irrigation canals, side ditches and road culvert, the land sliding is often found in the hazard area and the gully erosion is also found at some of agricultural lands during the rainy season.

(2) Present Problems

1) Land Sliding

Considering the topographic, geological and meteorological conditions of 10 irrigation schemes, the land sliding does not occur in every year. From the result of field investigations and information of Dzongkhang office, it takes 10 ~ 20 days for the renovation of canal after occurrence of the land sliding. Though it depends upon the scale of disaster and season, the effect on the crop yield is not expected so much in an average year.

In the study, the vulnerable conditions of 10 irrigation schemes was investigated as shown in the geological hazard map in the Appendix F and the possibility of land disaster was studied as the vulnerability index. The result is summarized below;

Summary of Vulnerability Index

		Ove	rthan 60	5.	5 ~ 60	.50	0 ~ 5 5	Total	Mean
Name of Canal	Code	Number of site	Total Length (m)	Number of site	Total Length (n1)	Number of site	Total Length (m)	Length of Canal (m)	Volnerability Index
Upper Lobeysa	CI.					4	700	7,100	39.83
Lower Lobeysa	C2	1	130	1	240	3	650	8,160	39.90
Bajo	(3	11	2,650	8	2.120	5	1,330	14,950	46.76
Phingyul	C10	3	870	5	1.020	6	1.940	16,240	41.45
Genikha	CIS	1 2.2		ı	170	: 🛂 :		3,500	44.53
Nalakha	C18]	270	2	750	-	•. I	3,700	48.12
Rutekha	C19	-		. :			•	2,260	36.16
Maphekha	C20	4	7 1 • 1 · 1		•		•	. ; 2,140	36.28
Naykoyuwa	C21	-	-	-		<u> </u>		1,760	30.80
Rumina	C22		-	-	-			1,100	36.60

2) Gully Erosion of Agricultural Land

The gully erosion was observed at the agricultural land where the main drainage tributaries are connected. It can be expected that some portion of agricultural land has been eroded every year, however, there is no information/data about the amount of land lost by gully erosion. The main drainage tributaries in the Sub-study area are shown in Fig. H.7.1. Any damage caused by the peak discharge of the tributaries has not been informed. The gully erosion only occurs at the connecting part of the agricultural land with main tributaries and it was considered that this problem is caused by the direct runoff of rainfall from the agricultural land.

3) Poor Drainage at High Hilly Area

There is some poor drainage area in the high hilly area caused by the spring water. Some terraced lands which are located at the down part by the spring has been not used. At present, the amount of these areas is quite a few and this should not be the big problem for the agricultural activities. However, considering the effective land use for the agricultural development, there is some possibility of land development, for even a few ha of land, with drainage improvement.

H.7.2 Proposed Counter Measures

(1) Basic Idea for Land Sliding

The necessary structures of the protection works for enforcement of the irrigation canals were suggested as shown in the Data Book V. These structures were designed with a consideration for the protection of irrigation canal and not for the prevention of land sliding. In the Study, the vulnerability at the hazard area was investigated and cost/benefit of the rehabilitation with enforcement of canal were roughly analyzed.

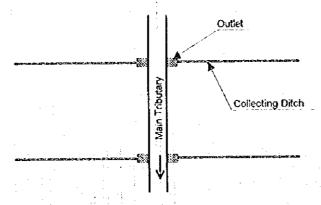
Basically, the suggested structures can be one of the prevention works but further studies should be required for the proper counter measure if perfect prevention of the land sliding is considered. From the result of field investigation, it can be said that the cost of prevention work should become quite high and the benefit of counter measure cannot be counted.

Based on the vulnerability index, the selection of the proper canal route will be one of the countermeasure for the land sliding for the planning of irrigation improvement.

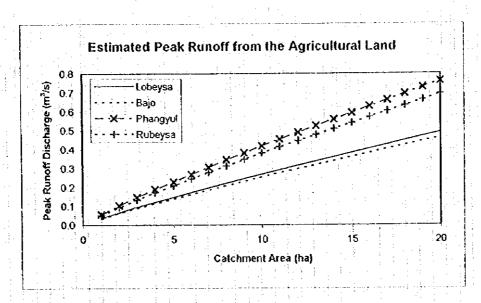
(2) Counter Measure for Gully Erosion

The installation of collecting ditch and outlet was proposed as the counter measure for gully erosion as shown below;

General Idea of the Counter Measure



Based on the result of the Hydrological study, the annual maximum direct runoff discharge from the rainfall for 5 year return period was estimated applying the rational formula and the result is summarized as shown below;



Considering the location of existing tributaries and based on the estimated runoff discharge, the collecting ditch and outlet were designed preliminarily as shown in the Data Book V and construction cost was estimated. The results are summarized below;

Summary of Construction Cost for Drainage System

Sub-Area	Total Drainage Area (ha)	Construction Cost (1000Nu)					
Lobeysa	300	528					
Bajo	118	182					
Phangyul	67	186					
Rubeysa	138	278					
Total	623	1.176					

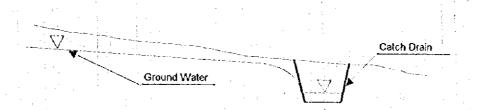
The drainage system for the prevention of gully erosion is supposed to be constructed using only approximately 1.2 million Nu; however, it is necessary to consider decrease of the agricultural production caused by the land clearance for

the construction. Therefore, further analysis should be required for the consideration of economical feasibility before implementation of the construction.

(3) Counter Measure for Poor Drainage Area

The installation of catch drain was proposed as a counter measure for poor drainage area at the high hilly area as shown below;

General Idea of Catch Drain



For installation of catch drain, only excavation work is required and the scale of the drain section should not be more than 40 X 40 cm. Considering the phenomenon of the experimental facility at Phangyul, it was expected that the dump area will be able to be used for more or less one year after installation of the catch drain. However, benefited area is quite a few.

11.8 Recommendation

For further detailed study and implementation of the irrigation improvement plan, the following considerations are recommended.

To improve and reinforce of basic information and data

For establishment of irrigation improvement plan, some of the basic factors such as rainfall, river runoss discharge, soil condition, etc. were estimated especially for high hilly area. Considering more detailed study, it is necessary to improve and reinforce the following basic information and data at the project site;

- Meteo-hydrological data
- Geological and hydrogeological data
- Farming conditions such as soil, unit yield and production cost
- Economical conditions such as farm gate price and marketing system
- Social conditions such as population
- Other basic information
- To design irrigation facilities considering the site condition

At present, 2.2 l/s/ha of the design discharge has been applied for the irrigation facilities at every where in Bhutan. However, the agricultural land is distributed from approximately 500 ~ 2,500 m altitude and water requirement should be varied depending upon the site conditions. In some cases, same water requirement has been applied even where there is not sufficient water at the intake site. Therefore, it

APPENDIX H

The Study on Groundwater Development in Wangduephodrang District of Bhutan

is necessary to decide the capacity of the irrigation facilities based on the meteohydrological condition, cropping pattern, soil conditions, etc. at site.

To acquire the understanding and cooperation of farmers

From the result of the Case Study, it can be said that the most effective counter measure for the irrigation improvement should be improvement of the water management system. For the establishment of new water management system, it is necessary to get the understanding and cooperation of farmers.

To improve the supporting system

The improvement of the farmers financial condition is one of the main purpose of the irrigation improvement plan. Considering the smooth implementation and achieving the benefit with project effectively, it is necessary to support the farmers financially as well as technically.

APPENDIX H TABLES

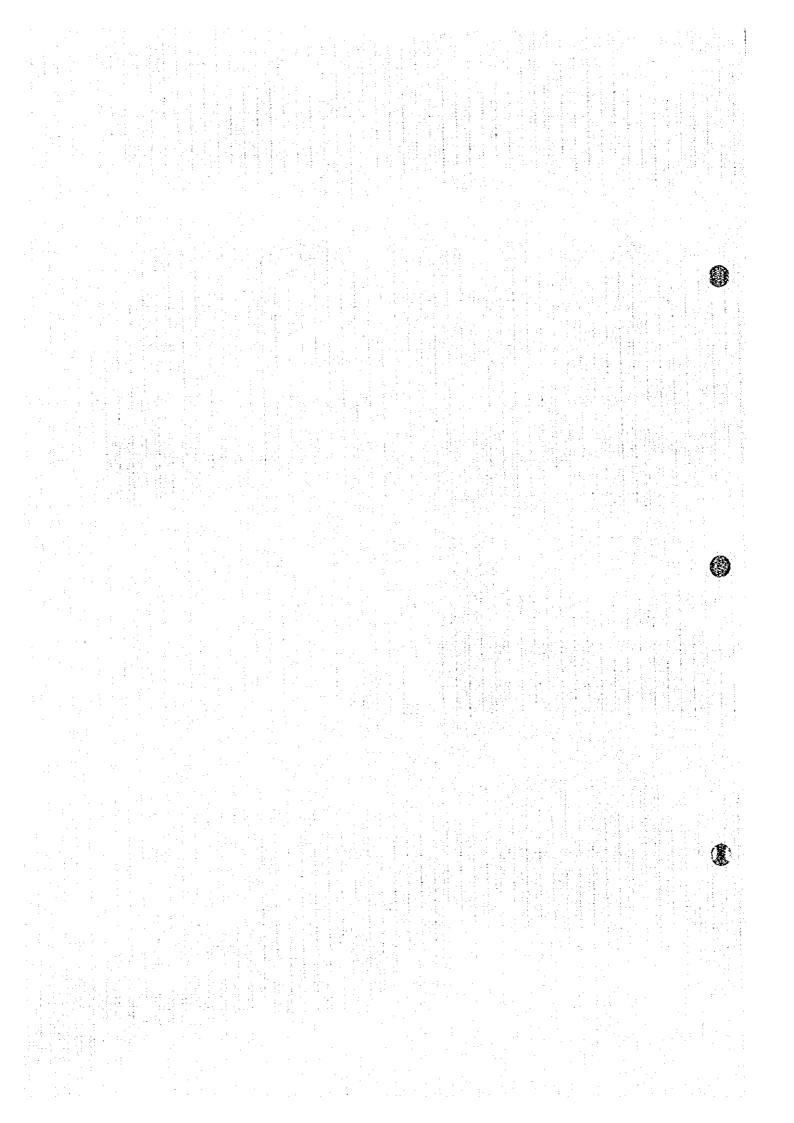


Table H.2.1 List of Irrigation Canals in and around the Study Area

P. STECKING THE	Name	Canal	Command	Number of	Gover	nment	e de la composition della comp
Code		Length	Area	Benefited	- Part Water to the second of	tance	Water Source
- draftmateur an	Canal	(Km)	(ha)	Household	IFAD-I	IFAD-III	
CI	Upper Lobeysa	7.1	61	117	0	. •	Tabe Rongchhu
C 2	Lower Lobeysa	8.1	300	123	, i. O	:	Tabe Rongchhu
C 3	Rinchengang	9.0	65	38	0		Nabe Rongchhu
C 4	Omte	3.5	21	25			Limti Chhu
C 5	Tata	2,0	22	24			Limti Chhu
C 6	Sichu	3.8	52	24		:" :	Limti Chhu
C 7	Gigu	1.6	41	34			Limti Chhu
C 8	Towgee	3.5	26	43			Limti Chha
C 9	Bajo	15.0	143	52		0	Pe Chhu
C10	Phangyul	16,0	91	42	O		Lachu
CH	Komathang	4.0	7	40		•	Komathang Chhu
C12	Chungsekha	6.9	200	50	0		Komathang Chhu
C13	Lower kashi	2.4	20	37		0	Komathang Chhu
C14	Jagatokha	4.3	16	39		O	Komathang Chhu
C15	Gemkha	3.5	15	23			Uship
C16	Balakha	4.0	40	50	O	0	Mochuna
C17	Themakha	3.1	40	35	0	0	Mochuna
C18	Nalakha	3.9	29	30		0	Mochuna
C19	Rutekha	2.2	40	60	object des des entre en		Takarong Chbu
C20	Maphekha	2.2	27	44		• ,	Takarong Chhu
C21	Naykoyuwa	1.7	24	18			Takarong Chhu
C22	Rumina	1.1	28	35	*************	**************************************	Takarong Chhu

Note: • - Planned to renovate from fiscal year 1994/95.

Table H.2.2 Water Management and O/M of canals (sheet 1/4)

Name of Canal	Upper Lobeysa									
Water Users Association	Exists									
Number of water guards	1 person									
Payment to water guard	5 N/0.1ha or 1.5 kg/0.1 ha									
Canal maintenance	Major maintenance work is done one time per year before									
Water allocation	There are 3 major irrigation blocks (villages), rotation of one day/night (24 hours) for each irrigation block									
	(1) Chang block 24 hours									
	(2) Bab block 24 hours (3) Wang block 24 hours									

Water Users Association Number of water guards 4 person (There are 4 offtake) Payment to water guard no payment (water guard is changes yearly) Canal maintenance Water allocation Water allocation Does not exist (planned to be formed) Association There are 4 offtake) Major maintenance work is done one time per year before paddy plantation rotation of one day/night (24 hours) for each irrigation block (1) cnd block of canal							
Number of water guards 4 person (There are 4 offtake) Payment to water guard no payment (water guard is changes yearly) Major maintenance work is done one time per year before paddy plantation rotation of one day/night (24 hours) for each irrigation block (1) end block of 24 hours							
Canal maintenance Major maintenance work is done one time per year before paddy plantation rotation of one day/night (24 hours) for each irrigation block (1) cnd block of 24 hours							
Water allocation Water allocation (1) cnd block of 24 hours							
Water allocation block (1) end block of 24 hours	naddy plantation						
(1) 24 nouis							
Law tayaran	*						
(2) Jikha block 24 hours							
(3) Bab block							
24 hours							
(4) Chang block	•						

Table H.2.2 Water Management and O/M of canals (sheet 2/4)

	Bajo							
Water Users Association	Does not exist							
Number of water guards	2 persons (Iperson each from Bajo and Wangjokha/Tangu villages)							
Payment to water guard	20 ~25 kg/ha of rice							
Canal maintenance	Major maintenance work is done one time per year before paddy plantation							
Water allocation	one day/night (24 hours) for 1 inlet or 1 acre of rotation							
	(1) RNRRC & NASEPP 1 day use							
	(2) Bajo village 5 days use							
	(3) Wanjokha/Tangu 5 days use yillage							

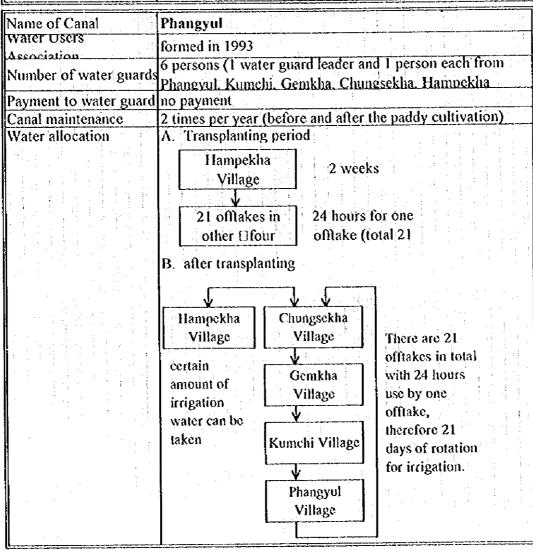


Table H.2.2 Water Management and O/M of canals (sheet 3/4)

Name of Canal	Gemkha
Water Users Association	Does not exist
Number of water guards	1 person
Payment to water guard	no payment (water guard not responsible for maintenance wo
Canal maintenance	2 times per year (before and after the paddy cultivation)
Water allocation	24 hours per farmer household; rotation on 26 day interval, (according to interview survey, there are 26 benefited households under the Gemkha irrigation canal scheme)

Name of Canal	Nalakha	
Water Users Association	Does not exist	
Number of water guards	water guard does not assigned	
Payment to water guard	no payment (one year rotation among beneficiaries)	
Canal maintenance		
Water allocation		

Name of Canal	Rutekha
Water Users Association	Does not exist
Number of water guards	water guard does not assigned
Payment to water guard	no payment
Canal maintenance	2 times per year (before and after the paddy cultivation)
Water allocation	rotation 24 hours for 2 households (total households : 70)

Name of Canal	Maphekha									į			
Water Users Association	Does not exist					<u> </u>				:			
Number of water guards	one person				· 	.1			:		:		
Payment to water guard	no payment					· .					.:		
Canal maintenance	2 times per year											:	
Water allocation	rotation 24 ho 52)	ours fo	r 2	hou	sehi	old	s (t	ota	l h	ous	ehe	olds	:

Table H.2.2 Water Management and O/M of canals (sheet 4/4)

Name of Canal	Rumina
Water Users Association	Does not exist
Number of water guar	ds water guard is turnwise during paddy plantation period by benefited households
Payment to water gua	
Canal maintenance	2 times per year
Water allocation	rotation of 24 hours per household (total benefited households: 35)

Table H.2.3 Estimated Rainfall and Effective Rainfall in the Study Area (1/2)

(1) Rainfall (mm)

Return Period 1/2													
Sub-area	Jan.	Feb.	Mar	Apr.	May	Jun	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	10.9	10.6	14.4	37.3	58.4	135.3	162.4	133.0	91.5	43.8	3,6	5.3	706.6
Lobeysa	10,4	12.4	14.6	39.3	60.9	141.4	171.8	147.5	98.4	42.7	3.4	5.1	747.8
Rubeysa	8.2	26.7	17.2	57.5	85.0	198.6	256.4	265.2	158.0	39,4	2.1	4.0	1118.4
Phangyul	7.6	30.7	17.9	62.5	91.7	214.3	279.9	298.4	174.6	38.3	1.7	3,7	1221.4
Return Period 1/5													
Sub-area	Jan.	Feb.	Mar	Apr.	May	Jun	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	9.1	8,8	12.0	31.0	18.6	112.6	135.1	110.7	:76.1	36.4	3.0	4.4	587.8
Lobeysa	8.7	10.3	12,2	32.7	50.8	117.8	143.1	122.9	82.0	35.6	2.8	4.3	623.2
Rubeysa	6.9	22.4	14.5	18.4	71.6	167.1	215.8	223.3	133.0	33.2	1.8	3.4	941.5
Phangyul	6.4	25.9	15.1	52.7	77.3	180.7	236.0	251.6	147.2	32.3	1.5	3.1	1029.9
CONTRACTOR CONTRACTOR	- consumeration			and the second second	Retu	rn Per	iod 1/1	0					1
Sub-area	Jan.	Feb.	Mar	Apr.	May	Jun	Jul	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	8.3	8.1	11.0	28.5	44.6	103.3	124.0		69.9	33,4	2.8	4.1	539.6
Lobeysa	8.0	9.5	11.2	30.0	16.6	108.2	131.4	112.8	75.3	32.7	2.6	3.9	572.1
Rubeysa	6.4	20.6	13.3	44.4	65.7	153.5	198.2	205.0	122.1	30.5	1.6	3.1	864.5
Phangyul	5.9	23.8	13.9	48.4	71.0	166.0	216.8	231.0	135.2	29.6	1.3	2.9	945.8
PERSONAL VALUE SALES	A	CONTRACT OF			Retu	rn Per	iod 1/2	20			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Sub-area	Jan.	Feb.	Mar	Apr.	May	Jun	Jul	Aug.	Scp.	Oct	Nov.	Dec	Annual
Bajo	7.8	7.6	10.3	26.7	41.8	96.8	116.1	95.1	65.4	31.3	2.6	3.8	505.2
Lobeysa	7.5	8.9	10.4	28.1	43.6	101.3	123.0	105.6	70.5	30.6	2.4	3.7	535.5
Rubeysa	6.0	19.3	12.5	41.5	61.4	143,4	185.1	191.5	114.1	28.4	1.5	2.9	807.6
Phangyul	5.5	22.2	13.0	45.2	66,3	155.0	202.4	215.8	126.3	27.7	1.3	2.7	883.2
THE REAL PROPERTY.	Acres Arms are	b-manual district of the second	land here had	Retu	rn Peri	od 1/5	(Exce	cdanc	e)				
Sub-area	Jan:	Feb.	Mar	Apr.	May	Jun	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	14.7	14.2	19.4	50.2	78.7	182.4	218.8	179.3	123.3	59.0	4.9	7.2	952.4
Lobeysa	13.9	16.6	19.5	52.4	81.3	188.7	229.2	196,9	131.4	57.0	4.5	6.8	998.1
Rubeysa	10.4	33.6	21.7	72.4	107.1	250.2	323.1	334.3	199.1	49.7	2.7	5.1	1409.5
Phangyul	9.4	38.3	22.4	78.0	114.4	267.4	349.2	3,72.2	217.9	47.7	2.2	4.6	1523.7
		5-270.00mas=c:/	<u> </u>	Retur	i Perio	d 1/10	(Exce	edann	ice)				
Sub-area	Jan.	Fcb.	Mar	Apr.	May	Jun	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	17.5	17.0	23.1	59.8	93,7	217.1	260.5	213.4	146.8	70.3	5.8	8.6	1133.6
Lobcysa	16.5	19.6	23.0	62.0				232.9		67.4	5.4	8.1	1181.0
Rubeysa	11.8	<u> </u>	24.8	82.6	122.2	285.3	368.4	381.1	227.0	Ŀ		5.8	
Phangyul	10.7		3	88.3	129.5	302.8	395.4	421.5	246.7	54.0	2.4	5.2	1725.4
	of Toleran International			Retur	n Peri	od 1/2	0 (Exc	eedan	ce)				
Sub-arca	Jan.	Feb.	Mar	Apr.				Aug.		Oct.	Nov.	Dec	Annual
Bajo	20.5		27.1	70.1	109.8	254.5	305.3	250.2	172.1	82.4	6.8		
Lobeysa	19.2	4	26.9	72.3	112.1	260.4	316.3	271.6	181.3	: 78.6	6.2	9,1	1377.1
Rubeysa	13.4	<u> </u>			137.8	321.7	415.4	429.8	256.0	63.8	3.4	6.6	
Phangyul	12.0			98.9	145.1	339,2	443.0	472.2	276.1	60.5	2.7	5.9	1932.9

Table H.2.3 Estimated Rainfall and Effective Rainfall in the Study Area (2/2)

(2) Effective Rainfall (mm)

Return Period 1/2													
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jon.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Bajo	10.2	9.9	13.2	30.2	44.1	85.5	97.4	84.4	63.8	34.5	3.5	5.2	481.9
Lobeysa	9.8	11,5	13.3	31.5	45.7	88.2	101.2	90.9	67.3	33.8	3.3	4.9	501,6
Rubeysa	7.8	22.5	15.5	43.5	60.3	110.6	124.4	125.8	95.5	31.6	2.1	4.0	643.4
Phangyul	7.2	25.5	16.0	46.8	63.9	115.2	127.6	129.2	102.4	30.9	1.7	3.6	669.9
Return Period 1/5													
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jún.	Jul	Aug	Sep	Oct.	Nov.	Dec.	Annual
Bajo	8.6	8.3	11.1	25.7	37.5	74,6	85.4	73.7	55.3	29.6	3.0	4.3	417.2
Lobeysa	8.3	9.7	11.3	27.0	38.9	77.2	89.0	79.7	58,6	29,0	2.8	4.1	435.6
Rubeysa	6.7	19.4	13.3	37.4	52.5	99.4	115.6	117.5	84.4	27.3	1.8	3.3	578.4
Phangyul	6,1	21.9	13.8	40.3	55.9	104.6	120.5	123.5	90.8	26.7	1.4	3.1	6.806
	Return Period 1/10												
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jon.	Jul	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Bajo	7.9	7.7	10.3	23.9	35,0	69.9	80.2	69.0	51.4	27.5	2.7	4.0	389.5
Lobeysa	7.6	8.9	10.4	25.0	36.3	72.4	83.7	74.8	54.8	26.9	2.5	3.8	407.2
Rubeysa	6.1	18.1	12.3	34.9	48.8	93.5	110.4	112.5	79,3	25.3	1.6	3.1	546,0
Phangyul	5.7	20.4	12.7	37.4	52.1	98.9		*****	85.4	24.7	1.3	2.8	576.7
					Retu	n Peri	od 1/2	0					POPULATION DE LA COMPANIO
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Bajo	7.4	7.2	9.7	22.5	33.2	66.5	.76.4	65,7	48.6	26.0	2.5	3.7	369.5
Lobeysa	7.1	8.4	9.8	23.6	34.4	68.8	79.7	71.1	51.8	25.4	2.4	3.6	386.1
Rubeysa	5.7	17.0	11.5	33.0	46.0	89.1	106.2	108.3	75.4	23.9	1.5	2.9	520.6
Phangyul	5,3	19.2	12.0	35.4	49.2	94.2	111.7	115.5	81.2	23.3	1.2	2.6	550.9
***		_		Retu	n Peri	od 1/5	(Exce	edanc	e)		-		
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec	Annual
Bajo	13.4	13.0	17.2	38.6	56.8	105.2	116.3	104.1	79.8	44.5	4.7	6.9	600.6
Lobeysa	12.8	14.9	17.2	40.0	58.2	107.4	118.9	110.0	83.7	43.1	1.1	6.5	617.2
Rubeysa	9.7	27.6	18.9	53.0	71.9	123.3	130.0	129.9	110.7	38.2	2.6	-4.9	720.8
Phangvul	8.9	30.9	19.4	56.3	75.5	126.1	129.2	127.1	116.1	37.0	2.1	4.5	733.1
		pressor	w.lenden.bei.co.c		n Perio	od 1/10	, , , , , , , , , , , , , , , , , , , 	-	paincrear,	70000	-		
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul	Aug	Sep	Oct.	Nov.	Dec.	Annual
Bajo	15.7		19.9	45.0	*****		125.0			51.7	5.6	8.1	672.6
Lobeysa	14.9	17.3	19.9	46.4	66.2	117.5	126.6		94.4	49.9	5.2	7.7	685.6
Rubeysa	11.0	30.9	21.1	58.9	79.3	128.2				42,9	3.0	5.6	752.7
Phangyul	10.0	34,3	21.5	62.1	THE RESERVE OF	THE REAL PROPERTY.	123.6	THE PERSON NAMED IN	122.6	41.2	2.4	5.1	753.2
			-		n Perio	-		pomwari g	Marie and American	; ;		_	CANADA POR MATERIA
Sub-Area	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul	Aug.	Scp.	Oct.	Nov.	Dec.	Annual
Bajo	18.0	17.5	22.9	51.6			129.6		101.4	58.8	6.5	9.1	736.3
Lobeysa	17.0	19.7	22.7	52.9	74.4		129.9		104.8	56.7	6.0	8.9	744.7
Rubeysa	12.3	34.1	23.5	61.6	86.6	~~~~	119.6		124.3	47.6	3,4	6.3	768.4
Phangyul	11.1	37.5	23.8	67.6	89.8	129.7	112.4	102.7	127.2	45.5	2.7	5.7	755.7

Table H.2.4 Unit Water Requirement (1/7)

	\				:										•						(unit:1/s/ha)	(ha)
·**():	Jan		Feb		Mar	٧	Apr	May	ay	un(Jul		Aug		Scp		Oct	Ż	Nov	Dec	Ċ
<u>3</u>			NA.	Wheel																Wheat	//////JE	
Bajo	0.900 0.900	1 ` `	1.384 1.384 1.830	1.830		1.386 0.852	0.405		3.288	2.898	2.049	1.797 0	0.886 0	0.971 0.9	0.1 916.0	1.019 0.918	18 0.309	6	0.467	0.734 0.865		0.955
Lobevsa	0.907 0.907 1.359	207 1.355	9 1.359	1.828		1.384 0.831	0.384		3.273	2.873	2.024	1.761 0.850	0.850 0.	0.912 0.857		86 0.83	0.986 0.886 0.315	5	0.471	0.738 0.869	698.0	0.959
Rubeysa	0.938 0.938 1.181	38 1.181		1.181 1.793	1.349	1.349 0.639 0.192	0.192		2.955	2.512	1,713	1.459 0	0.602 0	0.559 0.5	0.508 0.687	87 0.593	93 0.315	5	0.491	0.757 0.885		0.975
Phangyul	0.948 0.948 1.133	348 1.133	1.133	1.784	1.341	1.133 1.784 1.341 0.586 0.13	0.139		2.925	2.473	1.674	1.432 0.574	574 0	0.530 0.478		0.628 0.533	53 0.322	2	0.497	0.497 0.763 0.890		0.980
Cp2		Mesac	22		20001								Division							Mustard	art.	
Bajo	0.900 0.900 1.182 1.046 0.499	200 1.182	1.046	0.499					3.288	2.898	2.049	1.797 0	0.886 0	0.971 0.9	0.916 1.0	1.019 0.918	18 0.309	6	0.306	0.306 0.490 0.727		0.865
Lobevsa	0.907 0.907	907 1.156	5 1.021	0.497		ļ 			3.273	2.873	2.024	1.761 0	0.850 0	0.912 0.8	0.857 0.9	0.986 0.886	36 0.315	5	0.310	0.310 0.493	0.731	0.869
Rubeysa	0.938 0.938 0.979	38 0.975		0.844 0.462					2.955	2.512 1.713		1.459 0.602		0.559 0.508	908 0.6	0.687 0.593	93 0.315	5	0.330	0.330 0.513 0.747 0.885	0.747	0.885
Phangyul	0.948 0.948 0.930 0.795 0.453	348 0.93C	0.795	0.453					2.925	2.473	1.674	1,432 0	0.574 0.	0.530 0.4	0.478 0.6	0.628 0.533	33 0.322	2	0.336	0.336 0.519 0.752	0.752	0.890
<u> </u>	Mustard	tard					۲.									200				A.	Mustard	
Bajo	10.900 0.669 0.378	569 0.378	1	1.823 1.793 2.443	2.443	2.571	1.660	1.524	1.714	1.325	1.014	0.775 1	1.026 1.	1.882 1.8	1.882 1.0	1.070 1.07	1.070 0.921		0.855 0.622 0.467 0.865 0.531	0.467	0.865	0.531
Lobeysa	0.907 0.675 0.352	575 0.352		1.792	2.442	1.808 1.792 2.442 2.558	1.648	1.509	1.699	1.300	6860	0.739 0.991		1.823 1.8	1.823 1.037	1.037	37 0.927		0.862 0.624	0.471	0.869	0.533
Rubevsa	0.938 0.707 0.175 1.607 1.668 2.280 2.306	271.0 707	5 1.607	1.668	2.280	1,2.306	1.448	1.448 1.295	1.474	1.033	0.739 (0.497 0	0.734 1.	1.417 1.4	1.417 0.7	35 0.7.	0.735 0.735 0.891		0.830 0.598	0.491	0.885	0.542
Phangyul	0.948 0.717 0.127	717 0.127		1.582 1.663 2.275	2.275	3 2.277	1.420	1,420 1,265	1.443	0.993 0.700	0.700	0.470 0	0.706 1.387		1.387 0.6	76 0.6.	0.676 0.676 0.898		0.836 0.601	0.497 0.890		0.545
z,																		38				e-1-E
Bajo									3.288	2.898 2.049		1.797 0	0.886 0	0.971 0.9	0.916 1.0	19 0.9	1.019 0.918 0.309	6				(LPEX)
Lobevsa									3.273	2.873	2 024	1.761 0.850		0.912 0.8	0.857 0.9	0.986 0.88	0.886 0.315	5				ativities the
Rubeysa			-						2.955	2.512	1.713	1.459 0.602	0 209	0.559 0.:	0.508 0.687	87 0.593	93 0.315	5				
Phangyui		L.,,	:						2.925	2.473 1.674		1.432 0.574		0.530 0.478		0.628 0.533	55 0.322	2				
CpS		\$	Vegetable(winter)	CANT	(B)							Very table (winnerer	e (sum	(4-5-1)						Vege	Vegetable(wirt.)	B
Bajo	0.807 0.948		1.448 1.384 1.563 1.563	1 563	1.563		1.521 0.405		0.619	0.606	0.934 (0.795 0.795	795 0	0.845 0.	559 0.7	0.746 0.566	<u>(</u> %	-		0.306	0.457	0.727
Lobevsa	0.813 0.9	0.955 1.423		1.359 1.561	1.561		1,499 0.384		0.593	0.562	0.890	0.732 0	0.732 0	0.741 0.	455 0.689 0.509	89 0.50	60			0.310	0.461	0.731
Rubeysa	0.845 0.986	386 1.245	1.245 1.181 1.526 1.526 1.308 0.192	1 526	1 526	1.308	0.192		0.359	0.203	0.531 (0 361 0	0.361 0	0.181	0.2	0.237 0.057	57			0.330	0.477	0.747
Phangyul	0.855 0.996 1.197 1.133 1.517 1.517 1.255 0.139	96 1.197	7 1.133	1.517	1.517	1.255	0.139		0.301	0.129	0.457	0.301 0.129 0.457 0.308 0.308	0 808 0	0.125	0.125	25	<u>. </u>	:		0.336	0.482	0.752

Table H.2.4 Unit Water Requirement (2/7)

																					(unit:i/s/na)	VIII)
	Jan	1	Feb	W	Mar	Apr	3.5	veM.	۸	unſ		Jul	-	Aug		Sep		Oct]	Nov	Ω	Dec
Ē			B	When				28396													Wheat	
Bajo	0.926 0.926	26 1.409		1.409 1.863	1.419	1.419 0.924	0.477		3.347 3	2,997	2.148 1	0 906'1	0.995 1.	1.069 1.0	1.014 1.0	1.096 0.9	0 966 0	0.353	0.477	7 0.743	0.879	0.969
Lobevsa	0.931 0.931	31 1.387	7 1.387		1.860 1.417 0.904		0.457		3.335	2.973 2	2.124 1	1.873 0	0.962 1.	1.014 0.5	0.960 1.0	1.065 0.9	0.965 0.3	0.359	0.479	9 0.746	0.882	0.972
Rubcysa	756.0 756.0	57 1.231	1.231	1.828		1.385 0.736 0.289	0.289		3.022	2.608	1.809[1	1.535 0.678	.678 0.	0.630 0.5	0.579 0.7	0.782 0.6	0.687 0.3	0.352	0.496	6 0.763	0.763 0.895	0.985
Phangvul	161.1 161.1 9960 1.191	66 1.19,	1 1.191		1.377	1.820 1.377 0.690 0.243	0.243		2.993	2.563	1,764 1	1.493 0	0.636 0.	0.578 0.5	0.527 0.7	0.727 0.6	0.633 0.3	0.358	0.501		0.768 0.899	0.989
Cp2		Mustard	1					6668 6					ST. C.							We.	Mastard	
Bajo	0.926 0.926 1.207 1.072	26 1.20	7 1.072	0.532	2		-		3,347 [3	2.997	2.148 1	1.906 0	0.995 1.	1.069 1.0	1.014 1.0	1.096 0.5	0.996 0.3	0.353	0.316	\circ	.499 0.741	0.879
Lobeysa	0.931 0.931	_	1.185 1.050	0.529					3.335	2.973 [2	2.124 1	1.873 0	0.962 1.	1.014 0.9	0.960 1.0	1.065 0.5	0.965 0.	0.359	0.319	9 0.502	0.744	0.882
Rubeysa	0.957 0.957 1.028 0.893 0.497	57 1.02	3 0.893	0.497			-	date	3.022	2.608	1.809] 1	1.535 0	0.678 0.	0.630 0.5	0.579 0.7	0.782 0.687		0.352	0.335	5 0.518	951.0	0.895
Phangyul	0.966 0.966 0.988 0.853 0.489	86'0 98	3 0.853	0.489					2.993	2.563	1.764 1	1.493 0	0.636 0.	0.578 0.	0.527 0	0.727 0.633		0.358	0.340	0 0.523	0.761	668 0
Š	Mustard	ard					13.	12								1000×					Mustard	
Eajo	0.926 0.695 0.403	95 0.40	3 1.837	1.811	1.811 2.462	2.611		1.584	1.773	1.424	1,113 (0.884	1.135 1.	1.980 1.9	1 980 1	1.147 1.1	1.147 0.9	0.966 0.900	0.627	7 0.477	0.879	0.879 0.538
Lobevsa	0.931 0.700 0.381	00 0.38		1.825 1.810 2.461 2.600	2.461	2.600	1.689	1.571	1.761	1.401	1.089 (0.851	1.102 1.	1.925 1.9	1.925 1.	1.116 1.1	1.116 0.9	0.971 0.905 0.629	5 0.62	9-0.479	0.882	0.540
Rubevsa	0.957 0.726 0.225 1.634 1.687 2.299 2.358	26 0.22	5 1.634	1 1.687	2.299	2.358	1.500	1.362	1.541	1.129 (0.835 0	0.573 0	0.810 1.	1.488 1.	1.488 0.8	0.830 0.8	0.830 0.9	0.929 0.867 0.600	57 0.60k	0 0.496	0.496 0.895	0.547
Phangyul	0.966 0.734 0.184 1.612 1.682 2.295	34 0.18	4 1.612	1.682	2.295	2.333 1.476		1.333	1.511	1.083 (0.790 0.531		0.768 1.	1.436 1.4	1.436 0	0.775 0.7	0.775 0.9	0.934 0.872	72 0.603		0.501 0.899	0.549
Š													10.0									
Bajo			-						3.347	2.997	2.148	1.906 0	0.995 1.	1.069 1.0	1.014 1.0	1.096 0.5	0.996 0.353	353				452
Lobevsa				:					3.335	335 2.973	2.124	1.873 0	0.962 1.	1.014 0.9	0.960 1.0	1.065 0.9	0.965 0.	0.359				
Rubcysa								•	3.022 2.608		1.809	1.535 0.678	.678 0.			0.782 0.0		0.352		_		
Phangyul									2.993	2.563	1.764[1	1.493 0	0.636 0.	0.578 0.	0.527 0.	0.727 0.6	0.633 0.	0.358	_			DATE:
CpS			(caces)	Vegetable(winter)	Ť			L. 1933				4	feren ables successive	ş						Ve	Vegetable(with)	wita.)
Bajo	0.833 0.974		4 1.405	1,474 1,409 1,596 1,596	1.596	[1.592]0.477	0.477		0.724 0.781		1.109 (0.987 0	0.987 1.	1.018 0.	0.732 0.	0.883 0.7	0.703			0.316	5 0.471	0.741
[roped.ea	0.838 0.980	80 1.45	2 1.38.	1.452 1.387 1.593 1.593	1,593	1.572	0,457	:	0.702	0.739	1.067	0.929 0	0.929 0.	0.922 0.0	0.636 0.3	0.829 0.0	0.649			0.315	0.319 0.474	0.744
Rubeysa	0.864 1.005 1.295 1.231 1.562 1.562 1.405	05 1 29	5 1.23	1 1.562	1.562	1.405	0.289		0.484	0.383 0.711		0.502 0	0.502 0.	0.314 0.028		0 415 0	0.234			0.332	0.335 0.486	0.756
Phangyul	0.872 1.014 1.255 1.191 1.554 1.554 1.359 0.243	14 1.25	5 1.19.	1 1.554	1.554	1.359	0.243		0.429	0.299	0.626	0.626 0.424 0.424		0.216	0	0.312 0.1	0.132			0.340	0.340 0.491	0.761

Table H.2.4 Unit Water Requirement (3/7)

/ha)	J		0.974	0.977	0.989	0.993		0.884	0.887	0.899	0.903		0.541	0.543	0.549	0.552	ON PROPERTY.						0.746	0.749		0.765
(unit:1/s/ha)	Dec	Cath	0.884		0.899	0.503 0.770 0.903 0.993	ard.	0.503 0.746 0.884	0.749	0.761	0.342 0.525 0.765 0.903	Maczet	0.480 0.884 0.541	0.887	0.899	0.950 0.889 0.604 0.503 0.903 0.552						Veretable(w.n.)	0.320 0.476 0.746	0.479	0.491	565.0
	Nov	Wheat	0.747 0.884	0.750 0.887	0.765 0.899	0.770	DIRTERIAL CONTROL	0.503	0.5%	0.521	0.525			0.631 0.483	0.498	0.503				_		× 43	0.320	0.322	0.337	0.342
	Ž		0.480	0.483	867.0	0.503		0.320	0.322	0.337	0.342		0.629		0.602	0.604								-		-
	Oct		. [6	31.	<u> </u>	+		3 [8	6	4		1.182 0.985 0.919	1.152 0.990 0.924	5 0.884	0 0.889		3	8	Ğ,	7			 		-
			1.031 0.373	0 0.378	2 0.369	9 0.374		1 0.373	1.000 0.378	2 0.369	0.676 0.614 0.563 0.773 0.679 0.374		2 0.98	2 0.99	24 0.945	21 0.95		31 0.373	0.378	32 0.369	79 0.374		15	111	17	81
	Sep		L	1.000	6 0.732	1.533 0.676 0.614 0.563 0.773 0.679		11 1.031		26 0.732	73 0.67	(A)			1.530 0.874 0.874	21 0.821		31 1.031	01 1.000	26 0.732	73 0.679		0.944 0.764	91 0.711	97 0.317	0.398 0.218
			57 1.131	34 1.101	21 0.826	53 0.77		57 1.131	04 1.101	21 0.826	63 0.7		23 1.182	1.970 1.152	30 0.8	72 0.821		57 1.131	04 1.101	21 0.826	65 0.773		6.0 808.0	14 0.891	0.107 0.497	0.3
	Aug		12 1.057	1.059 1.004	73 0.621	14 0.5		1.112 1.057	1.059 1.004	0.673 0.621	14 0.5		2.023 2.023	1.970 1.9	1.530 1.5	1.472 1.472		1.112 1.057	1.059 1.004	573 0.621	514 0.5	4.2		1.001 0.714	0.394 0.1	0.284
			1.043 1.112	1.010 1.0	721 0.673	576 0.6		1.043 1.1	1.010 1.0	0.721 0.6	90 929		1.183 2.0	1,151 1.5	0.854 1.5	0.808 1.		1.043[1.]	1.010 1.0	0.721 0.673	0.676 0.614 0.563	Version States of the Contract	1.071	1.015 1.0	0.584 0.	798 0
	Jul		1.953 1.0	1.921 1.0	.579 0.721	533 0.6		1,953 1.0	1.921 1.0	579 0.	1.533 0.0		!	0.899 1.	0.617 0.	0.571 0.		1.953 1.	1.921 1.	1.579 0.	.533 0.	2 X X X	1.071	1.015 1.	0.584 0	0 861
			1	2,168 1.	859:1	1.813 1.		2.191 [1.	2.168 1.	1.859 1.	1.813 1.		1.156 0.931	1.133 0.	0.886 0.	0.839 0.		2,191 1.	2.168 1.	1.859 1.	1.813 1.533		1.185	1.145 1	0.805 0	0.719 0.498 0.498
	un		3.040 2.191	3.017 2	2.659 1			3.040 2	3.017 2	2,659 1	2.612 1		1.468 1	1,445 1	1.17910	1.133 0		3.040 2	3.017 2	2.659 1	2.612		0.857	0.817		
	 >		3.370		3.05412			3.370	3.359	3.054	3,025		1.796	1.784	<u>_</u>	<u> </u>		3.370	359	3.054	3.025		0.764	0 744	0.543 0.477	0.490 0.391
	May											833	1.606	1 595	1394	1.365										
	D.		0.507	0.488	0.329	0.289						K	1717	1.707		1.500							1 622 0 507	0.488	1445 0329	0.289
	Apr		0 954	0.935 0.488	0.776	1 393 0.736 0.289							1.819 2.470 2.628	2618	2 379	2357										10.
	Mar		1 876 1 432	1 430	1 401	393							12470	2 2 468	1 695 2 307	1 2 303				_	ļ	174	911606	7 1 607		01.57
::	_	N. Deciet	1 876	0 1 874	4 % T	83		1 217 1 082 0 545	2 0.543	5 0.513	8 0.500	-	3 1 816	181	09/1/9	1 69			_	<u> </u>		Verpetrabilisticians	1 1821 1 120 1 1 609 1 609	1 00	1 578	5 1.57
	Feb	100	§	0 1 300	76 1 2	12:1		1 08	7/106	0 0 91	3 0.87		3 1 843	2 1 83	77	601 60		-	-	+-	_	Verse to	1	1 30	7 1 253	30 1 2
			7 1 420		0.042 0.042 1.052 1.053 1.844 1.4011.0 776 0.329	0.973 0.973 1.915 1.215 1.837	A Programme			0 966 0 966 1 050 0.915	0.973 0.973 1.013 0.878 0.506	1	512 0 202 0 725 0	0 042 0 710 0 393 1 831 1 818 2 468 2 618	0.066 0.734 0.246 1.646	0.973 0.747 0.209 1.626 1.691 2.303 2.357 1.506		_		-		2000			14 1 317	
	Jan		750 01250	1210 02	1 2 2	73.097		00	12 0 9	% O 95	73 0.97	To the state of th	7 0 7	5 0 7	2 2	72 0 72		-	-	-			0 844 0 085	0000	0.872 1.014	301
	-		000	┪	1	1.	7	0.937	1	1	┱┈	- "	Ò	†	7	1	1	1	-		13	200,000	ľ		_	_
		1		opmics	S. S. S. S. S. S. S. S. S. S. S. S. S. S	Dhanon		7 gg	operes !	Rubeyes	Phanovul	200	3 2 2	2007	Dukang	Phones	in in the second	C C C	Z oberes	Ruboves	Phanevil	į			53.640.6 640.6	Phanocal

Table H.2.4 Unit Water Requirement (4/7)

(unit:1/s/ha)	Dec		8 0.978	1 0.981	2 0.992	966.0 9		010.888	0.753 0.891	0.764 0.902	8 0.906	,	8 0.544	1 0.545	2 0.551	6 0.553				:		(wise.)	0.0750	0.483 0.753	4 0.764	8 0.768
(unit		Wheat	0.483 0.750 0.888 0.978	0.752 0.891	0.767 0.902 0.992	0.771 0.906	Mustard	0.506 0.750	0.508 0.75	0.522 0.76	0.343 0.527 0.768 0.906	Mustand	0.483 0.888	0.486 0.891 0.545	0.896 0.603 0.500 0.902 0.551	0.504 0.906				_		Vezetable(win.)	0.322 0.480 0.750	0.325 0.48	0.339 0.494	0.343 0.498
	Nov		0.483 0.	0.486 0.	0.500 0	0.504 0.		0.322 0.	0.325 0.	0.339 0.	0.343 0.		0.6310.	0.632 0.	0.603 0.	0.605 0.					_		0	0	0	0
	Oct												0.933	1.004 0.938	968.0	0.963 0.901										
	_		56 0.386	27 0.391	65 0.382	15 0.387		56 0.386	27 0.391	65 0.382			666.0 80		956.0 20			1.056 0.386	27 0.391	55 0.382	15 0.387		01	58	02	92
	Sep		1.157 1.056	1.127 1.027	0.859 0.765	809 0.7		1.157 1.056	1.127 1.027	0.859 0.765	809 0.7	A 44.5	1.208 1.208	1.178 1.178	907 0.907	857 0.8		1.15711.0	1.127 1.027	0.859 0.765	809 0.7		0.830 099.0	938 0.758	0.560 0.380	0,794 0,564 0,564 0,345 0,059 0,466 0,286
	gr		1:087	1.038 1	0.657 0	0.596 0		1.087 1.	1.038 1.	0.657 0	0.596 0.809 0.715		2.053 1.	2:003 1.	1.566 0.907	1.504 0.857 0.857		1:087	1.038	0.657 0.	0.710 0.647 0.596 0.809 0.715		0.861 0.	1.060 0.774 0.938	0.175 0.	0.059 0.
	Aug	47)	7 1.142	7 1.092	8 0.709	0.647		7 1.142	7 1.092	3 0.709			2.053	2.003	1.566	1.504	444	1.142	1.092	0.758 0.709	0.647	Shirt summers	1.147	090.1	0.461	10.3451
	Jul	1	988 1.077	1.958 1.047	1.616 0.758	1.568 0.710 0.647 0.596 0.809 0.715		1.988 1.077	1.958 1.047	1.616 0.758	1.568 0.710 0.647		0.966 1.217	0.936 1.187	54 0.890	06 0.842	4	88 1.077	1.958 1.047	1.616 0.758	1.568 0.710		1.132 1.132	1.079 1.079	53 0.653	64 0.56
			222 1	2.201 1.9	1.897 1.6	1.854 1.5		2.222 1.9	2.201 1.9	1.897 1.6	1.854 1.5		1.187 0.9	1.166 0.9	0.923 0.654	0.880 0.606		2,222 1,988	2.201 1.9	1.897 1.6	1.854 1.5		1.240 1.1	1.203 1.0	0.876 0.653	794 0.5
	Jun		3.071 2.	3.376 3.050 2	2.696	2.653 1		3.071 2	3.050 2	2.696	2.653		1.499 1	1.478 1	1.217 0	1.173		3.071 2	3.050	2.696 1	2.653 1		0.912 1	0.875 1	0.548 0	537 0,467 0
	May		3.387	3.376	3.078	3.051		3.387	3.376	3.078	3.051		3 1.813	2 1.802	8 1.596	1.569		3.387	3.376	3.078	3.051		0.794	0.775	0.588	0.537
		100	29	11)	09	21	. :			-	<u> </u>		30 1.623	20 1.612	38 1.418	17 1:391						*	29	11	09	21
	Apr		0.976 0.52	15.0 856.0	.807 0.360	768 0.321							.641 1.73(2.631 1.720	2.395 1.538	375 1.5		_		•		×	1.644 0.529	1.627[0.51	.475 0.3	1.437 0.32
	Mar		1.442	0.949 0.949 1.408 1.408 1.884 1.440 0.958	1.413 0.807	1:405 0.768		100000					0.945 0.713 0.421 1.847 1.825 2.475 2.641	2.474	1.702 2.314 2	0.979 0.748 0.228 1.635 1.698 2.310 2.375 1.517		-			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Û		1.617	0.879 1.020 1.334 1.269 1.590 1.590 1.475 0.360	1.582
:	X	Where	7 1.886	8 1.884	9 1.856	4 1.849		0 0.555	0 0.553	2 0.525	6 0.518		7 1.825	6 1.824		5 1.698						Vegetable(winter)	1.491 1.427 1.619 1.619	1.472 1.408 1.617	9 1.590	4 1.582
	Feb		1.427 1.427	1.40	0.972 0.972 1.269 1.269	0.979 0.979 1.234 1.234	tard	0.945 0.945 1.225 1.090	1.206 1.070	0.972 0.972 1.067 0.932 0.525	815.0 968.0 1.031 979 979.0		21 1.84	02 1.836	0.740 0.263 1.654	28 1.63		7				Vegetal	91 1.42	72 1.40	34-1:26	1.298 1.234
		iii Mii Mii Mii Mii Mii Mii Mii Mii Mii		949 1.4	.972 1.2	979 1.2	Vastard	.945 1.2	.949 1.2	972 1.0	0.1 676.	naterd	.713 0.4	0.949 0.718 0.402	740 0.2	748 0.2		:		*			0.993 1.4	1	.020 1.3	.027 1.2
	Jan		0.945 0.945	0.949 0	0.972 0	0.979 0		0.945 0	0.949 0.949	0.972 0	0.979 0	Musterd	0.945 0	0.949 0	0.972 0	0.979 0		1					0.851 0	0.856 0.998	0.879 1	0.886 1.027
		Cb1	Baro	Lobevsa	Rubeysa	Phangvul	Cp2	Bajo	Lobevsa	Rubeysa	Phangyul	Cp3	Bajo	Lobeysa	Rubevsa	Phangrul	<u>S</u>	Baio	Lobevsa	Rubeysa	Phangvul	Cp5	Bajo	Topensa	Rubersa	Phangyul

Table H.2.4 Unit Water Requirement (5/7)

Return Period 1/5 (Exceedance)

		* · ·																		. (1	(unit:1/s/ha)), (EU)
	Jan	F	Feb	Mar	11.	Apr		May		Jun		Jul		Aug		Sep		Oct	VOV	 >	Dec	-
Cp1			Maca	(A)									40.00					*		When	34	
Bajo	0.848 0.848	8 1.334	1.334 1.765 1.322 0.717	1.765	1.322	0.717.0	0.271		3.172 2.	2.718 1	1 698.1	1.624 0.713		0.791 0.737		0.872 0.772	2 0.218		0.448	0.71510	0.838	0.928
Lobevsa	0.859 0.859		1.303 1.303 1.765		1.321	1:521 0.694 0.247	247		3.159 2.	2.698 1.	1.849 1	1.600 0.689		0.738 0.683	3 0.837		0.737 0.230		0.453 (0.720 0.843) <u>843(</u>	0.933
Rubeysa	0.908 0.908	8 1.099	1.099	1.738	1.294	0.485 0.038	.038	7	2.856 2.	2.403 1.	1.604 1	1.411 0.554		0.524 0.473	3 0.556	6 0.462	2 0.259		0.482	0.749	0.869	0.959
Phangvul	0.921 0.921 1.047 1.047 1.730	1-1.047	1.047	1.730	1.286 0.432	0.432			2.825 2.	2.379 1.	1.580 1	1.418 0.5	0.561 0.548	548 0.496		0.510 0.416	6 0.269	Pagarra.	0.490	0.757 0.876		0.966
Cp2		Mustard	Ŧ															***		Mustard	22	
Bajo	0.848 0.848		1.131 0.996 0.434	0.434					3.172 2.	2.718 1.	1.869 1	1.624 0.713	13 0.7	0.791 0.737	7 0.872	2 0.772	2 0.218		0.287	0.470 0.699		0.838
Lobevsa	0.859 0.859	1.101 6	0.966 0:434	0.434	- · *			(<u>(</u>)	3.159 2.	2.698 1	1.849 1	1.600 0.689		0.738 0.683	3 0.837	7 0.737	7 0.230		0.293	0.476	0.705 0	0.843
Rubeysa	0.908 0.908 0.897 0.762 0.407	8 0.897	0.762	0.407			 .	1 2	2.856 2.	2,403 1.	1,604 1	1.411 0.554		0.524 0.473		0.556 0.462	2 0.259		0.321	0.504 (0.731 0	698.0
Phangyul	0.921 0.921 0.844 0.709 0.399	1 0.844	0.709	0.399				12	2.825 2.	2.379 1.	1.580 1	1.418 0.561		0.548 0.496		0 0.410	0.510 0.416 0.269		0.329 (0.512 0	0.738 0.876	.876
. cao	Mustard	בת														\$40 K.				S	Marched	
Bajo	0.848 0.617 0.328	7 0.328	1.794	1.757	2.407	2,494 1	1.583 1	160+	1.598 1.	1.146 0.834		0.602 0.853		1.702 1.702		0.923 0.923		0.830 0.764	0.6111	0.448 0.838		0.515
Lobevsa	0.859 0.627 0.297	7 0.297	1.777	1.756 2.407		2,481 1	1.570 1	.395[1	1.585 1.	126 0	815 0	.126 0.815 0.578 0.830		1.649 1.649	888.0 6	8 0.88	0.888 0.842 0.777		0.614 (0.453 0.843		0.519
Rubevsa	0.908 0.676 0.093 1.564	5 0.093		1.638	1.638 2.251 2.224	2.224 1	1.366 1	1.196[1	1.375 0.923 0.630 0.449	923 0	630 0	989 0 681		1.381 1.381		4 0.60	0.604 0.604 0.835	0.773 0.593		0.482 (0	0.869 0.533	533
Phangvul	0.921 0.690 0.040		1.536	1.634	2.246 2.195		1.338 1	1,165] 1	1.343 0.	0.900 0.606	0 909	0.456 0.693		1.405 1.405	5 0.558	8 0.558	8 0.845	0.784 0.597		0.490 0	0.876	0.537
Cp4	2	1											000									
Bajo							-	3	3.172 2.	2.718 1.	1.869 1.624	624 0.7	0.713 0.791	91 0.737	7 0.872	2 0.772	2 0.218					r-elister
Lobeysa				١					3.159 2.	2.698 1.	1 848 1	689 0 009		0.738 0.683	3 0.837	7 0.737	7 0.230					Compt.
Rubcysa						_		12.	856	2.403 1.	1.604 1	411 0.554	L	0.524 0.473	3 0.556	6 0.462	2 0.259					
Phangvul	-			:				2	2.825 2.	2.379 1.	580 1	1.580 1.418 0.561 0.548 0.496	61 0.5	48 0.49	6 0.51	0 0.410	0.510 0.416 0.269					e sate
CpS		77.	Vegetable(winter)	(winte	0	60.000						Vocate Silvinores		(45)						Veget	Veretable(win.)	1
Bajo	0.755 0.897	1.398	1.334	1.499	1.499	1.386 0.271	-)1/2:	0-	0:415[0.	0.289 0.	0.617 0	0.490 0.490	90 0.5	0.529 0.242	2[0.488]	8 0.308	8)	0.287 0.429	.429 0	0.699
Lobevsa	0.765 0.907	1.368	1.303	1.498	1.498	1.362	0.247	0	0.392 0.	0.254 0.	0.582 0.	378 0 778	-	0.434 0.148	8 0.426	9770 9	3)	0.293 (0.435 0	0.705
Rubcysa	0.814 0.956 1.164 1.099	5 1.164		1.471	1.471	1.154 0.	0.038	0	0.173	10	0.326 0	0.270 0.270	70 0.115	15						0.321 0	0.461 0	0.731
Phangyul	0.828 0.969 1.111 1.047 1.463	9 [1.11]	1.047		1.463	1.101	<u>;</u>	0.]	0.114		0.282 0	0.283 0.283		0.159			:			0.329 0.468	0 89±1	0.738

Table H.2.4 Unit Water Requirement (6/7)

Return Period 1/10 (Exceedance)

(unit:1/s/ha)	ЭC		8 0.908	25 0.915	58 0.948	57 0.957		30 0.818	37 0.825	20 0.858	0.728 0.867	2.6	8 0.504	25 0.508	58 0.527	57 0.532						c(win.)	089.0 60	17 0.687	0.450 0.720	
(uni		Wheat	701 0.8	0.708 0.825	0.743 0.858	752 0.80	Mustard	0.456 0.680	463 0.687	499 0.72	0.508 0.72	Mustard	434 0.8	0.441 0.825	476 0.858	485 0.867				******		Venerable (win.)	0.275 0.409	0.280 0.417	215 0 4	
	Nov		0.434 0.701 0.818	0.441 0.	0,476 0.	0.485 0.752 0.867		0.273 0.	0.280 0.463	0.315 0.499 0.720	0.325 0.		0.603 0.	0.607 0.	0.590 0.476	0.595 0.							10.	0	C	;
	Oct												669'0	0.715	0:733	0.748								-		_
	_		74 0.152	691.0 01	6 0.219	0.360 0.234		74 0.152	10 0.169	6 0.219	50 0.234		5 0.764	187.0 10	9 0.795	018:0 2		74 0.152	691.0 0	6 0.219	50 0.234		5:	[+/		-
	Scp		0.774 0.674	740 0.640	0.491 0.396	454 0.36		0.774 0.674	740 0.640	491 0.396	0.454 0.360	****	1.604 0.825 0.825 0.764 0.699 0.603 0.434 0.818 0.504	791 0.791	0.539 0.539	1,482 0,502 0,502 0,810 0,748 0,595 0,485		0.634 0.693 0.639 0.774 0.674 0.152	0.740 0.640	491 0 396	454 0.360		0.315 0.135	0.254 0.074		
1	8		0.639 0.	1.531 0.620 0.649 0.594 0.740	0.506 0.	1,466 0,608 0,624 0,573 0,454		0.639 0.	0.594 0.740	0.506 0.491	0.573 0.		1.604 0.	1.560 0.791	1.415 0.	1.482 0.		0.639 0.	0.594 0.	0.506 0.491	0.573 0.454		0.069 0.	0.		_
	Aug	100	0.693	0.649	0.575 0.558	0.624	3720	0.693	0.620 0.649	855.0	0.624		1.604	1.560	1.415	1.482	194	1 0.693	0.649	0.558		(2000)	0.355	0.325 0.277	178	_
	Jul	ď	1.545 0.634	31 0.620		309'0 99	F.	1,545 0,634	1.531 0.620	1,432 0,575 0,558	1.466 0.608		0.523 0.774	08 0.760	70 0.707	0.504 0.740 1.482	1		31 0.620	32 0.575	1,466 0.608 0.624	Vergetable terrander	50 0.350		1010 310	
			1.772 1.5	1.757 1.5	562 1.432	.551 1.4		1.772 1.5	.757 1.5	1.562 1.4	1.551 1.4			0.722 0.508	588 0.470			1.772 1.545	1.757 1.531	.562 1.432	1.551 1.4	3.5	0.445[0.350]	0.420 0.325	0150 8760	
	Inn		2.621 1.	2.606 1	2.361 1	2.350 1		2.621 1	2.606 1	2,361 1	2.350 1		1.049 0.737	1.034 0	0.882 0.	0.871 0.577		2.621 1	2.606 1	2.361 1	2,350 1		0,117 0	0.092 0	V I	-
	May		3.098	3.086	2.792	2,763		3:098	3.086	2.792	2.763		1.524	3].1.512	3 1.311	1.281		3.098	3.086	2.792	2.763		0.284	0.264	2500	
				44	-	-						1010	25 1.334	12 1:323	16 1.133	89 1.103								44	•	-
	Apr		1.278 0.614 0.16	0.591 0.144	0.390	340							2.436 1.52	2,423 1.5	2.173 1.3	2.146 1.28		<u>.</u>					1.283 0.16	1.260 0.14	080	
	ır		1.278 0.	1.279 0.	1.259 0.	1.252 C.	:						2.382 2.	2.382 2.								. (-	1.454 1.		1 1757 1	
	Mar	Wheat	1.721	1.722	1.702	1.696		0.390	0.928 0.391	0.371	19870		1.774 1.731	1.755 1.732	1.620 2.232	1.507 1.616 2.228						Vegetable(winter)		1.265 1.456 1.456	0501 [957 1 [957 1 [270 1	
	Feb	W	8 1.298	55 1.265	17 1.047	3 0.993	ard	96 0 961	53 0.928	607.0 21	0.790 0.655 0.365				1955.1 ot	1.507				-		Vegetah	1.363 1.298 1.454	30 1.265		
			312 1.29	325 1.20	387 1.04	903 0.99	Mustard	312 1.09	325 1.063	8.0 288	903 0.75	Mustard	581 0.29	0.594 0.259	556 0.0	572			:				0.860 1.30	873 1.330	1 1 5:0	
	Jan		0.812 0.812 1.298 1.298 1.721	0.825 0.825 1.265 1.265 1.722	0.887 0.887 1.047	0.903 0.903 0.993 0.993 1.696 1.252 0.340		0.812 0.812 1.096 0.961 0.390	0.825 0.825	0.887 0.887 0.844 0.709 0.371	0.903 0.903	. Ma	0.812 0.581 0.292	0.825 0.5	0.887 0.656 0.040	0.903 0.672							0.719 0.3	0.732 0.873	111 1 550 0 702 0	ントトン
		Id	Bajo	Lobevsa	Rubeysa	Phangyul	Cp2	Bajo	opcivsa	Rubcysa	Phangyul	Sa Sa	Bajo	esvoqo	Rubeysa	***	ξ. 4	Bajo	obevsa	Rubeysa	Phangyul	Cp5	Bajo	Lobevsa	Г	

Table H.2.4 Unit Water Requirement (7/7)

Return Period 1/20 (Exceedance)

(unit:1/s/ha)	သိုင		0.797 0.887	0.806 0.896	0.847 0.937	\$57 0.947	Ą	659 0.797	0.450 0.668 0.806	0.709 0.847	0.503 0.719 0.857	Mustard	0.419 0.797 0.493	0.806 0.498	0.847 0.521	0.857 0.526						Veretable(win.)	0.388 0.659	0.398 0.668	0.439 0.709	0.449 0.719
n)	Nov	Wheat	0.419 0.686 0.	0.427 0.694 0.	0.470 0.737 0.	0.748 0.857	Ministard	0.258 0.442 0.659	0.450 0.	0.309 0.493 0.	0.503 0	Ma	0.419.0	0.427	0.470 0.	0.481						Vereta	0.258 0.	0.267 0.	0.309 0.	0.320 0.
	z		0.419	0.427	0.470	0.481		0.258	0.267	0.309	0.320		0.634 0,595	0.653 0.599	0.693 0.587 0.470	0.711:0.592			:							
	O B		0.087	0.107	0.178	0.196		0.087	0.107	0.178	0.196		0.699 0.6		0.754 0.6	0.773 0.7		0.087	0.107	0.178	0.196					
	Sep		0.576	0.545	0.346	0.321		0.576	0.545	0.440 0.346	0.321	100	0.727 0.727	1.497 0.696 0.696 0.719	0.488	0.463		1.503 0.592 0.617 0.562 0.676 0.576 0.087	0.545	0.346	0.321		2	9		
			0.562 0.676	0.586 0.532 0.645	0.591 0.440	0.706 0.415		0.617 0.562 0.676	0.586 0.532 0.645	0.591 0.44	0.706 0.415		1.528 0.72	69.0 165	1.500 0.488	1.614 0.463		562 0.67	0.532 0.645	0.591 0.440	0.757 0.706 0.415		0.142	0.086	j050.	0.265
	Aug		0.617		0.642	0.757 0	.00			0.642	0.757		1.528	1.497	1.500	1.614	- 220	0.617 0	0.589 0.586 0	0.642	0.757]0	(Jones	0.221	0.167	0.336 0.050	0.553 0.551 0
	Jul	4	1.503 0.592	1.500 0.589	1.500 0.643	1.562 0.705 0.757	-	1.503 0.592	1.500 0.589	1.500 0.643	1.562 0.705		0.481 0.733	0.478 0.729	0.539 0.775	0.600 0.837	F	503 0.592	1.500 0.589	1.500 0.643	1.562 0.705	Januard Schalle (A)	0.277 0.277	0.271 0.271	0.437 0.437	0.553 0.553
	TI.		1.698 1.5	1.689	1.547 1.	1.549		1.698 1	1.689	1.547	1.549		7.0 699.0	0.654	0.573	0.575 0.0		2.547 1.698 1.	1.689	1.547	1.549	2.5	0.314 0.2	0.299 0.3	0.219 0	0.223 0.5
	unf]		22 2 247	11 2.538	30 2.346	02 2.348		22 2.547	011 2.538	30 2.346	02 2.348		448 0.974	37 0.965	0.866	898.0			011 2.538	30 2.346	22 2.348		50	32		
	May		3.022	3,011	2.730	2.702		3.022	3.0		2.702	9	1.259 1.4	1.248 1.437	1.070 1.248	1.042 1.220		3.022	3.0	(2.730	2.702		0.150	0.132		
and the second of	Apr		8 0.061	0.486 0.039	9	1: 1						ì	1.465	2.363 1.452	2.124[1.267]	2.099 1.242							7 0.061	1.155 0.039	7	
			1.230 0.508 0.00		1.220 0.299	1.215 0.251							2.355 2.376		211 2.12						1 -		1.407 1.177		397 0.967	392 0.92
	Mar	Wheat		1.677 1	1.664	1 65911		0.343	0.346	0.333	0.328		1.705	1.706 2.357	1.508 1.599 2.211	1.478 1.596 2.208						Vegetable(winter)	1.407 1.	1.226 1.410 1.410	1.397 1.	1.392 1
	Feb		262 1.262	226 1.226	94 0.994	040 0.940	tard	59 0.924	24 0.889	792 0.657	737 0.602		56 1.754	20 1.733	1.508			-				Vegetab	326 1.262		59 0,994)04 0.940
	u		0.775 0.775 1.262 1.262 1.674	0.791 0.791 1.226 1.226 1.677 1.233	0.867 0.867 0.994 0.994	659.1 056.0 056.0 988.0 988.0	Mostard	0.775 0.775 1.059 0.924 0.343	0.791 0.791 1.024 0.889 0.346	0.867 0.867 0.792 0.657 0.333	0.886 0.886 0.737 0.602 0.328	Mostard	0.775 0.543 0.256 1.754	0.791 0.559 0.220 1.733	0.635	0.654							0.823 1.326 1.262 1.407	0,697 0,839 1,291	0.915 1.059 0.994 1.397 1.397	0.792 0.934 1.004 0.940 1.392 1.392 0.920
	Jan		0.775	0.791	0.867			0.775	0.791	0.867		X	0.775	0.791	0.867 0.635	0.886 0.654				***			0.681	0.697	0.773	
		Col	Bajo	Lobevsa	Rubcysa	Phangvul	Cp2	Bajo	Lobeysa	Rubevsa	Phangyul	င်မဲ့	Baio	Lobevsa	Rubcysa	Phangvul	Ω \$	Bajo	Lobevsa	Rubeysa	Phangyu	Cps	Bajo	Lobersa	Rubeysa	Phangyul

Thale H.2.5 Present Diversion Water Requirements (1/7)

Return Period 1/2

Area(ha)	Jan		Feb	Man Man	Mar.	Apr		Bajo	Bajo (unit: Us) av Jun.	: Vs) Jun.	Jul		Aug.		Sep.		Ö		Nov	ŭ	Dec.
105 94.5 94.5	15	15	94.5 145.3 145.3	197	145.5	'দৈ	42.5	345.2		15.1	188.7	93.0 102.0	M 1	6.2	107.0	96.4 32	32.4	49.0	0 77.1	1	90.8 100.3
30 27.0 27.0	0.7	35	35.5 31.4	15.0			-	86	6.88	61.5	53.9	26.6	29.1	27.5	30.6 2	27.5 9.	.3	6	2 14.7	21.8	26.0
10																		_			***
150								493.	493.2 434.7	307.4	269.6	132.9 1	145.7	137.4 [15	152.9 13	137.7 46.	4		_		
15 12.1 14.2	$\overline{2}$		21.7 20.8	23.4	23.4	22.8	6.1	9.3	3 9.1	14.0	11.9	11.9	12.7	8.4	11.2	8.5			46	6.9	10.9
300 133.6 135.7	7.	202.5	.5 197.5	230.6	169.0	112.3	48.6	946.	946.4 835.0 598.0 524.1 264.4 289.4	598.0	524.1	264.4 2	89.4 20	269.4 30	301.6 27	270.1 88.	. 1	58.	2 96.4	119.5	137.1
	1							Lobey	Lobeysa (unit: 1/s)	: I/s)											***
Jan.	l		Feb.	Mar	H.	Apr.	-	May	Ţ	Jun.	Jul		Aug.		Sep.		S		Nov.	ŭ	Dec.
41 37.2 37.2		1	55:7] 55.7	74.9	56.7	34.1	15.7	134.2	2 117.8	0.58	72.2	34.9	37.4	35.1[4	40.4 3	36.3 12	12.9	19	9.3 30.3	35.6	39.3
12 10.9 10.9		5	13.9 12.3	0.9	-	7		39.	3 34.5	24.3	21.1	10.2	10.9	10.3	11.8	10.6] 3	3.8	3,	5.9	8.8	10.4
0		2			- - - -			raye o							_	-		-			<i></i>
59			-			-		1193.1	1 169.5	119.4	6.501	50.2	53.8	50.6	58.2 5	52.3 18	18.6	-			
6 4.9 5.	L^	. w	15 8.2	9.4	4.6	0.6	2.3	<u> </u>	3.4	5.3	4.4	4.4	4 4.	2.7	4.1	3.1			1.9	2.8	4.4
118 52.9 53.8			78.1 76.1	90.3	66.1	43.1	18.0	370.	370.1 325.1 232.0	232.0	201.6	99.6	106.6	98.7 11	114.6 10	102.3 35	35.3	23.0	.0 38.0	47.2	54.1
								Rubevsa		(unit: 1/s)											THE ROLE
Jan.			Feb.	Mar.	1 1	Apr		Mav	٠.	Jun.	Jul		Aug		Scp.		Ö		Nov.	Ŭ	Dec.
23 21.6 2		21.6 27.2	7.2 27.2	41.2	31.0	14.7	4.4	.89	.0 57.8	39.4	33.6	13:8	12.9	11.7	15.8	13.6	.2	11	3 17.4	20.4	22.4
9'9		999	6.5 6.9	3.2				20.7	7 17.6	12.0	10.2	4.2	3.9	3.6	4.8	4.2	2.2	2.	3 3.6	5.2	6.2
0		_									Į	-						-			
34							5	100.5	5 85.4	58.2	49.6	20.5	0'61	17.3	23.4 2	20.2 1C	10.7	-	_		- Section
3 2.5		3.0.3	3.7 3.5	5.4.6	4.6	3.9	9.0		1 0.6	1.6	1.1	1.1	0.5		0.7	0.2	_		1.0	1.4	2.2
30.7		31.1 37	37.8 36.6	5 49.1	35.6	18.6	5.0	190.2	2 161.4	111.2	94.5	39.6	36.3	32.5	44.7 3	38.1 20	20.2	13	13.6 22.0	27.0	30.9
								Phang	Phangyul (unit: i/s)	it: 1/s)											ьек
Jan.			Feb.	Mar	ar.	Apr.		May	٠. -	Jun.	lu!		Aug		Sep.		Oct.		Nov.	ŭ	Dec.
48 45.5 4	1.4	45.5 54	54,4 54,4	1 85.6	64.4	28.1	6.7	140	4 118.7	80.4	68.7	27.6	25.4	22.9	30.1 2	25.6 15.	5.5	23.9	9.98 6.	42.7	47.0
13.3	12.	13.3	13.0 11.1	1 6.3		<u> </u>		14	0 346	23.4	20.0	8.0	7.4	6.7	8.8	7.5 4	4.5	4	.7 7.3	10.5	12.5
0					-											-			-		ne-sat
69		<u>.</u>	:	-				201.8	8 170.6	115.5	8.86	39.6	36.6	33.0}	43.3 3	36.8 22	22.2				traf.
7, 6.0		7.0	8.4 7.9	9.01 (10.6	8.8	1.0	2	1 0.9	3.2	2.2	2.2	6.0		0.9		-		i;	4 3.4	5.3
138 64.8 6:		65.7 75	75.8 73.4	73.4 102.6	75.0	36.9	9.7	385	385.3 324.9	222:5	189.7	-77.4	70.3	62.6	83.1 6	69.8 42.	2.2	28	28.6 46.2	56.6	8.43
	ı					44.00		4													

Tbale H.2.5 Present Diversion Water Requirements (2/7)

	101.7	26.4			11.1	39.2		:	39.9	10.6		-62 N	4.5	54.9			22.7	6.3			2.3	31.2		endowa.	47.5	12.6		200	5.3	
Ě	92.31	22.2			7.1	1.61		Dec.	36.2	8.9		-	2.8	47.9		Dec.	20.6	5.3			1.5	27.3		Dec.	43.2	10.7			3.4	
-	78.0	15.0	-		4.7	97.7 121.6 139.2			30.6	6.0			1.9	38.5			17.5	3.6			1.0	22.2			36.9	7.3			2.4	,
No.	50.17	9.5				9.65		No.	9.6	3.8				23.5		Nov.	11.4	2.3				3.8 2		Nov.	24.0[_3	4.8	-			
				<u>.</u>		35			Ţ	_				7											2			_	-	ľ
Č	; :	9:		53.0		ن		Oct.	4.7	3	-	21.2		40.2		; Ö	8.1	2.5		12.0		5		oct:	7.2	5.0		24.7		
	6 37	9 10.		4	S	325.6 294.4 100.6			1	6 4,	-		3.9	Į.			8	8		4	0.7	.7 22.			4 17	89 5		7	<u>[6</u> :	
£	101	9 29	}	149	2 10	5 294.		šep.	7 39.6	[]		6 95 8	0 3	3 112.0		Sep	0 15	5 4		23	2 0	3 44.7		Sep.	9 30.			2 43.	2 0	
	115	32.		164.4	13.2			<u> </u>	43	12.8	-	62.8	\$	124.3		,	0.81	5.	~~~	7 26.6	1 1.	51.3			3 34.	t 10.2		50	7	
Ang	106.5	30.4		152.1	11.0	319.9 300.0		Aug.	39.4	11.5		56.6	3.8	1111.3		Aug.	13.3	4,1		19.7	0	37.1		Aug.	25.	7.4		36.4		
Ā	112.2	32.1		160.4 152.	15.3			Ź	41.6	12.2		8.65	5.5	119.1		۲	14.5	4.4		21.4	6.0	41.3		۲	27.7	8.1	1	39.9	1.5	
	104.5	29.9	<u> </u>	149.3	14.8	298.4			39.4	11.5		8.99	9.6	113.3			15.6	4.7		23.1	1.5	44.9			30.5	8.9		6'87	3.0	
hil	200.1	57.2		285.9	14.8	58.0		ľuľ	76.8	22.5		110.5	5.6	215.4		Jul	35.3	10.7		52.2	1.5	7.66		Jul	71.7	20.9		103.0	0.5	
<u></u>	25.5	64.4		322.2 2	16.6	964.8 865.9 628.8 558.0	: (%)	-	87.1	25.5	1	125.3	6.4	244.3 2	(s/.		41.6	12.7		61.5	2.1	117.9	(%)		84.7	24.7		121.7	4.4	
(unit : 1/s)	12	6.68	_	449.6	11.7	55.9 6	(unit : 1/s)	ri.	121.9	35.7		175.4	7.7	337,4 2	(unit: i/s)	Jun	0.00	18.3		2.88	1.1	168.1 1	Phangoul (unit: Vs)	Jun	123.0	35.9		1.26.8	2.1	I
.0	1.431	100.4	· · · ·	502.1 4.	6.01	4.88	Lobevsa (136.7	40.0	-	1 8.961	4.2	377.7 3.	Rubeysa	-	69.5	21:2		102.7	1.5	16.561	ig Series	-	143.7 13	617		206.5 V	3.0	
	35.	10		8		8	Lob	May	113	4	-	115	-	37	Rub	May			-	10		51	Phar	Mav	17	7		- 30	<u> </u>	
	1		- -	-	7.2	7.2		_	2.7				2.7	21.5			9.9			-	6.0	7.5			1.	-		<i></i> 1	1.7	
And	97.0, 50.		-		23.9	20.9 57		Vai:	37.1 18.	_	<u> </u>		-4	46.5 2		Apr	16.9				7	21.1		Apr.	33.1 11			1	3	
-			_	_	l	1=		_	-	_	_		6	Ŀ		-	i	2 2	-	:	4			<u> </u>	 -				6	
Į.	S 149	<u></u>	ļ	_	9 23.9	51172		Mar	3 58	65		ļ	9.6	2 67.7	ļ	Mar.	0 31.9	5	-		7	2 36.5		Mar.	4 66.	8			6.01 6	
	1195	2 16.0			1 23.9	2,235			۱ĸ	ŀ		_	3 9.6	8 92.2			3 42.0	3 3.5	ļ.,	_	7 4.7	3 50.2		_	8	89 6		_	3 10.9	
د يو د يو	147.9 147.9 195.6 149.0	32.2		,	7	201		Feb.	56.9	12.6		L	8.3	77.8		Feb.	28.3	6.3	:		3.7	38.3		Feb.	57.2	11.9			8.3	ı
) [<u>j</u>		36.2			22.1	206.3			56.9	Į			8.7	<u>'</u>		L.	%	7.2			3.9	39.4			ίζ	13.8			88	
	97.2	27.8			14.6	300 137.5 139.6 206.3 201.2 235.5 172.9			38.2	11.2			5.9	55.2		d	22.0	6.7			3.0	31.7		 	46.4	13.5			7.1	
18	97.2	27.8			12.5	137.5		Jan.	38.2	11.2		Γ	Š	54.4		Jan	22.0	6.7			2.6	31.3		Jan.	46.4	13.5			<u>ج</u>	
1	100	1		150	ļΣ	3001	1	ha)	12	12	0	59	8	118		(gr.	155	7	0	77	~	15		(F	87	14	0	જ	-	The second second
Areacha	2							Area(ha)							1	Area(ha)								Area(ha)						
	CP1	81	82	7.	۲	8		C.Pattern	12.	5,	8	8	CPS	Total	1	C.Pattern	2	81	8	75	SPS PS	Total		2.Pattern	2	8	83	22	SES	
اُمُ		SS	CPS	CP2	SPS	Total		C.Pa	CP1	CP2	CP3	CP4	ਹ	ß		CP	8	CP2	CP3	CP4	Ö	ပို		C.Pg	CPI	S S S	្រ	CP4	ပြ	

Thale H.2.5 Present Diversion Water Requirements (3/7)

				j							ois.	Raio (mit : 1/x)												
		,	-	1	-	7,00		V D		Ve V		E.				Anc		Sep	\vdash	ू ठ	Ž L	Nov	Dec	
C.rattern CP1	Aca(na)	Jan. 08 41 (08.4 149.1) <u> </u>	9	197 0 150 4		100.2	53.2		3.9	319,2[230.1		205.1 109.5		116.8 111.0	1.0	118.8 108.3	.	39.2	50.4	78.4	92.8	102.3
CP2	30	28.1	88	1		16.4					101.1	91.2	65.7	58.6	31.3	33.4 3	31.7 3	3.9	30.9	11.2	9.6	15.1	22.4	26.5
S S S	0		┺-	L	l	ľ		<u> </u>	<u> </u>	<u> </u>									-					
CPA	150		<u> </u>	-	<u> </u>						505.5	456.0 328.7		293.0 1	156.5 1	166.8 15	158.6 16	169.7 15	154.7 \$	56.0				
, Ye	151	12.7	14.8	22.3	21.3	24.1	24.1	24.3	76	1	11.5	12,9	17.8	16.1	16.1	16.4	12.1	14.2	11.5			4.8	7.1	11.2
Total	300		100	07.9 2	5	_	তি	124.5	8.09	•	971.9 879.3	879.3 6	642.2 5	572.7[3	313.3 3	333.3 31	313.4 33	336.5 305.3 106.	5.3 10	6.3	0.09	ı	98.3 122.3	140.0
							1]ំ	peysa	Lobeysa (unit: 1/s)	(%)											
Dottern	Armacha	Tan	-	Feb		Mar	L	Apr	ي	Mav	 ≥	'un'		Jul	-	Aug.		Sep.		Oct.	Ž	Nov.	Dec.	ن
<u> </u>	41	38.6	988	57.4	57.4	76.8	58.6	38.3	20 0		137 7	123.7	6.88	78.8	41.4	43.4	41.2	45.1] 4	41.0 1	15.5	19.8	30.8	36.4	40.1
- G	12	11.3	I_	4.	12.7	6.5				2.2	40.3	36.2	26.0	23.1	12.1	12.7	12.0	3.2.	12.0	4.5	3.9	હ	9.0	10.6
CP3	0	-				 													-					
757	65	-			-						198.2	178.0	127.9	113.3	9.65	62.5	59.2	65.0 5	59.0	22.3	٠.			
S C S	9	5.1	5.9	88	83	9.6	9.6	9.6	2.9		4.5	4.9	6.9	6.1	6.1	0.9	4.3	5.3	4.3			1.9	7	4.5
Total	118	55.0	٦	1_	セ	93.0	68.3	0.84	22.9		380.7	342.8	249.7 2	122122	119.2 1	124.6 1	116.7 13	128.7 11	116.3 4	42.3	23.7	38.8	48.2	55.2
									1	[~	Rubeysa	(unit: 1/s)	ľ,,)										Į	
O Dattorn	(ch)	7.07		FCD	-	Mar	7	Apr	ĭ	May	1	Jun		Jul		Aug.		Sep.	-	Oct.	Ż	Nov.	Dec.	Ç.
	7.7	22.2	5	28.8	× ×	42.4	32.2	17.8	7.6		70.2	61.2	42.8	36.3	16.6	15.5	14.3	19.0	16.8	8.5	5.11.5	17.6	20.7	22.7
3 6		8 9	il z	П	3	96					21.4	18.6	13.0	=	5.0	4.7	6.	28	5.1	2.6	2.4	3.6	5.3	6.3
160		1													-	-	-	<u></u>			-			
3 6	12.		T	 		1				:	103.8	90.4	63:2	53.7	24.5	22.9	21.1	28.1	24.9	12.5				
ě	eri	26	30	0.4	3.8	17.4	4.7	4.3	0		9.1.	1.4	2.4	1.8	81	1.2	0.3	1.5	0.1			1.0	1	. ,
Total	67	31.6	32.0	40.1	39.0	50.7	37.0	22.2	9.8		197.1	171.6	121.4	102.8	47.9	44.3	40.1	54.4	47.8	23.6	13.8	3 22.3	27.5	
									.	조	nangan	Phangvul (unit: I/s)	: 1/s)											
Dattern	Armacha	Inn.		Feb	,	Mar	ĭ	Apr	H.	Σ	Mav	.lun	,	Jul		Aug.		Scp.		Oct.	Z	Nov.	Dec.	χ.
16	╌╂╌╌	167	16	58.3	583	88.2	6 9	35.3	13.9	1	145.2	125.4	87.0	73.6	32.4	29.5	27.0	37.1	32.6	18.0	24.1	37.0	43.3	47.7
(A)	7	13.6	13.6	7	123	7				:	42.4	36.6	25.4	21.5	9.5	8.6	7.9	10.8	9.5	5.2	4.8	3 7.3	10.7	12.6
ido ido	0	L																				_		
č	69										208.7	180.2	125.1 105.8	105.8	46.6	42.4	38.8	53.3	46.9	25.8				
		6.2	7.2	0.6	8.5	0:1	11.0	8.6	2.0		3.4	2.7	5.0		3.5	2.0		2.8	. 1	-	_	·	ŀ	- 1
. Joseph	138	10	67.5	81.5	79.1	79.1 106.3	11	45.2	15.9		399.7	344.9	344.9 242.5 204.3		92.0	82.4	73.8 1	104.0	90.5	49.0	28.9	9 46.7	57.5	65.7
				1																				

Thale H.2.5 Present Diversion Water Requirements (4/7)

	- 1	119.9[114.1]121.5[110.9] 40.5] 50.7] 78.8 93.2[102.7]	34.3 32.6 34.7 31.7 11.6 9.7 15.2 22.5 26.6		71.3 163.1 173.6 158.4 57.9	17.2 12.9 14.9 12.2	42.7[322.7[344.6]313.1[110.0] 60.4 98.8[122.9[140.6]		Aug. Sep. Oct. Nov. Dec.	42.6 46.2 42.1 16.0 19.9 30.8 36.5	13.1 12.5 13.5 12.3 4.7 3.9 6.1 9.0 10.7	~	61.2 66.5 60.6 23.1	2.0	128.7[120.9 131.9[119.6] 43.8[23.8] 38.9[48.5] 55.4		Aug. Sep. Oct. Nov. Dec.	8 11.5 17.6 20.7 2	5.0 4.6 6.0 5.4 2.7 2.4 3.7 5.3 6.3		29.2 26.0 13.0	1.0 1.5	46.8 42.6 56.7 50.1 24.4 13.9 22.3 27.6 31.4		Aug. Sep. Oct. Nov. Dec.	31.1] 28.6 38.8 34.3 18.6 24.2 37.0 43.5 47.8	9.1 8.3 11.3 10.0 5.4 4.8 7.4 10.8 12.7		44.6 41.1 55.8 49.3 26.7		2.4 0.4 3.3 2.0
113.1 32.3 161.6 17.0 323.9	113.1 32.3 161.6 17.0 323.9	32.3 34.3 161.6 171.3 17.0 17.2 323.9 342.7	161.6 171.3 17.0 17.2 323.9 342.7	161.6 171.3 17.0 17.2 323.9 342.7	17.0 17.2 323.9 342.7	323.9 342.7			Jul. Aug.	9 44.8	=		61.8 64.4	5 6.5 6.4	225.8 123.7 128.7 120		Jul. Aug		0		25.8 24.1 2	2.0 1.4	50.5 46.8		Jul. Aug.	34.1 31.1	9.9 9.1		2 49.0 44.6	4	13 05 5 5 5 5
5 322 5 233 3 208	5 556 5	1	92.1 66.7 59		460.7 333.3	13.7 18.6 17.0	000	a (unit: I/s)		125:1 90.2 80	36.6 26.4 23.		199.2 180.0 129.9 115.5	5.3 7.2 6	346.9 253.7	Rubeysa (unit: I/s)	Jun.	62.0 43.6 37	18.9 13.3		91.7 64.5 5	1.6 2.6 2.0	198.8 174.2 124.0 105.4	ul (unit: l/s)	Jun.	127.3 89.0 75.3	7 37.1 26.0 22.0		183.1 127.9 108.	3.3 5.6	* 000 x 0x 0 0 00 0
May 55.5 355	5 355		10.101		1.808.1	6.11.	63.5	Lobevsa	Mav	21.0 138.4	40.5	and the second second second		3.1 4.7	24.0 382.8	Rubeys	. Mav	8.3 70.8	21.5		104.7	1.1	9.4 198.8	Phangyul	- 1 - 1 - 1 - 1	15.4	42.7		210.5	2.2 3.8	
ar. Apr	3 601 4 131	10.701 14.101				1 24.3 24.7	175.7 127.1		Mar. Apr.	59.01 39.3		***************************************		8:6. 2:6 1	68.7 49.0		Mar. Apr.	7 32.5 18.6	ļ.,			8 4.8 4.4	37.3 23.0		Mar. Anr.	8 67.4 36.9	3			11.1	0 10
Y Year		149.8 149.8 198.0	32.7	1		22.4 21.4 24.3	203.912		Feb. M	57.7 57.7 77.2	14.5 12.8 6.6	1		8.8 8.4 9.7	81.01-79.0 93.6		Feb.	29.2 29.2 42.7	7.5 6.5 3.7			4.0 3.8 4.8	40,7 39.5 51.1		Feb.	59.2 59.2 88.8	14,4 12.5 7.3			9.1 8.6 11.1	
	Jan.	2 66	28.4			12.8 14.9 22	140.3 142.5 209		Jan	38.9	11.4	:	2.5	5.11 6.0	56.3		Jan.	22.4	8.9			2.6 3.1	31.8 32.2 4		Jan.	47.0 47.0 \$	13.7 13.7 1		1 1	6.2 7.2	
	Area(ha)	105		0	150	15	3001		i Area(ha)	-}	12	0	59	9	118		Area(ha)	-	7	ō	34	6	129		Arca(ha)	-	14	0	69	1	
	C.Pattern	CD.	C55	83	CPZ	Sec	Total		C Pattern	පි	8	EE EE	CP4	CPS	Total		C Pattern	පි	25	S S	CP4	CPS	Total		C.Pattern	رة ك	CES	SP:	CP4	ÇŞ.	

Tbale H.2.5 Present Diversion Water Requirements (5/7)

Return Period 1/5 (Exceedance)

T See										ğ	Rain (mait : 1/c)	14 . 1/6)									ŀ		107
100 to	AreaChal	1	į	Ü	1,4,5	>	Mar	{) Vo.					,		Ü			,		١	
Craticin	, VICA(112)					-4-	7	A DI	٠ ١,	May	T	≐Ի				ا			5	Š	اٰ≤	2	ان
- 	105	8		1	_	듸	99	75.3	28.5	33	333.1 285.	5.4 196.2	5.2 170.5	5 74.9	83.1	77.4	91.6	81.1	22.9	47.0	75.1	88.0	97.4
CP2	30	25.4	25.4	33.9	29.9	13.0				\$	95.2 81		56.1 48.	7 21.4	23.7	22.1	26.2	23.2	-6.5	9.8	14.1	21.0	25.1
CP3	0			: :		٠																	
CP4	150		: ::							(4)	5.8 40	475.8 407.7 280.4	.4 243.6	6 107.0	118.7	110.6	130.8	115.8	32.7				
CPS	15	11.3	13.5	21.0	20.0	22.5	22.5	20.8	4.1	-1	6.2	4.3	9.3 7.4	4 7.4	7.9	3.6	7.3	4.6			4.3	6.4	10.5
Total	300	125.8	127.9	195.0	300 125.8 127.9 195.0 190.0 220.8 161	220.8	161.3	96.1	32.5	91	0.2 77	910.2 779.0 541.9		470.2 210.6	233.4	213.7	255.8	224.6	62.1	55.7	93.5	115.4	133.1
			٠.							Tob	Lobevsa (u	(unit: Us)	•										-
C.Pattern	Area(ha)	13	Jan	F	Feb	Mar	ar	Apr.	ن	Mav		Jun		Jul	Aug	οú	Sep		ğ	Nov	×.	D S	ن
CP1	41	35.2		53.4	53.4	72.4	54.2	28.5	10.1	112	129.5 110.	0.6 75.	8 65.	6 28.2	30.3	28.0	34.3	30.2	9.4	18.6	29.5	34.6	38.3
CP2	12	10.3	10.3	13.2	11.6	5.2				£	37.9 3.	32.4 22.	2 19	2 8.3	6.8	8.2	10.0	8.3	2.8	3.5	5.7	8.5	10.1
CP3	0	7.	7,						- A A														
CP4	6\$									118	86.4 159.	9.2 109.1	1 94.4	4 40.7	43.5	40.3	49.4	43.5	13.6				
CP5	9	4.6	5.4	8.2		0.6	0.6	8.2	1.5		2.4	1.5 3	5.2	7 -2.7	2.6	0.9	2.6	1.5			1.8	5.6	2.7
Total	811	50.1	51.0	74.8	72.8	9.98	63.1	36.6	11.6	. 35	356.2 30:	303.7 210.6	181	6'62 6	<u> </u>	77.4	96.3	84.0	25.8	1 22.1	37.0	45.6	52.6
										Rub	evsa (L	Rubevsa (unit: 1/s)	<u>.</u>										
C.Pattern	Arca(ha)	Ja	Jan.	Ŀ,	Feb.	Mar	ת	Apr		Mav		Jun.		Jul.	Aug	t i	Sep		Ö	Nov	<u>``</u>	D	<u>آ</u>
CPI	23	50.9	20.9	25.3	25.3	0.05	29.8	11:2	6.0	9	65.7 \$	55.3 36.9	32.	5 12.7	12.1	10.9	12.8	10.6	6.0	11.1	17.2	20.0	22.1
CP2	7	6.4	7.9	6.3	5.3	2.8	-			- 5	20.0	16.8 11	2 9.9	9 . 3.9	3.7	5.5	3.9	3.2	1.8	2.2	3.5	5.1	6.1
CP3	10	4.	-					<u> </u>			Ŀ							-	 		4-2-4-		
CP4	34						,		-	6	97.1.8	81.7 54.	5 48	0 18.8	17.8	16.1	18.9	15.7	8.8		-	 	
CPS	3	2.4	2.9	3.5	3.3	4.4	4.4	3.5	0.1	-	0.5		1.0 0.8	8.0.8	0.3						1.01	4.	2.2
Total	. 67	29.7	30.1	35.0	33.9	47.2	34.2	14.6	-1.0	18	3.3 15.	183.3 153.8 103.6	.6 91.1	1 36.3	33.9	30.3	35.6	29.6	16.6	13.3	21.7	26.5	30.3
								1.		Phan	i) Invai	Phangvul (unit: l/s)	(3										- 10 Sec.
C.Pattern	Area(ha)	Jan.		Fe	Feb.	Mar.	ir.	Apr	, :	May		Jun.		Tul	Aug	εi.	Sep	_	್ರ ಕ	Nov	- - - - - -	Dec	
CP1	85	44.2	44.7	50.3	50.3	83.0	61.7	20.7		113	5.6 11	4.2 75.	.8 68.1	1 26.9	26.3	23.8	24.5	20.0	12.9	23.5	36.3	42.0	46.4
CP2	14	12.9	6:21	11.8	6.6	9.6				. 3	39.6	33.3 - 22.1	6'61 11	6.7 6	7.7	6.9	7.1	5.8	3.8	4.6	7.2	10.3	12.3
CPS	0		-				-				1.0							-				ļ	
CP4	69							5		61	94.9 164	4.2 109.	0 97.	8 38.7	37.8	34.2	35.2	28.7	18.6	-	-	ļ	
CP5	7	5.8	8.9	7.8		10.2	10.2	1.7			8.0	2	2.0 - 2.0	L	1						2.3	3.3	5.2
Total	138	62.9	63.9	8.69	67.5	6.86	72.0	28.4		37	0.931	1.6 209	370.9 311.6 209.0 187.7	75.5	72.9	0.50	8.99	54.5	35.2	28.1	45.8	55.7	63.8
																					1		

Tbale H.2.5 Present Diversion Water Requirements (6/7)

Return Period 1/10 (Execedance)

												1/2.					١	l						27
ا ئ			-	٦							<u>}</u>	June (4.11)	}	1,17	-	δ., V		Ę	-	Oct.		No.N	Ç	
C.Pattern	Arca(ha)	٦ŧ.		reb.		Mar	: انظ	Y Y	12	15 S	- (226 2 226 2 106 1		, c 53	7 777	72.01	2 1 67	812 708	1		45.6	72.6	85.01	05.2
<u>:</u>	COI		85.5	1.50.3	150.5	130.7	7.4.5	0.40	3	1	2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	13.61				1		2 6						7
CF2	30	24.4	24.4	32.9	28.8	11.7		1		1	92.91	9.8/	23.2	4.0	19.0	20.8	7	7		0	7.0	4	t.03	7. 7.
CP3	0						-			·· 			-	-	\dashv		-		1	_				-
CP4	150							<u> </u>	 -	7	464.7 393.2	93.2 24	265.8 231.8		95.1 10	104.0 9.	95.9 116.1	. 1 101.1	1 22.8	<u>«</u>	_			
Sec	15	10.8	12.9	20.4	19.5	21.8	21.8	19.2	2.5	 	4.3	8.1	6.7	5.3	5.3	5.3	1.0	4.7	2.0			4.1	6.1	10.2
Total	300	-		9.68	189.6 184.6 214.2	214.2	156.0	83.7	20.0	×	887.2 7	748.7 511.7 445.6	11.7 4		185.9 20	202.8 183.2	3.2 225.3	.3 194.1	11 43	3	53.8	91.4	112.4 130.1	30.1
										آغ	beysa	Lobeysa (unit: 1/s)	Vs)											
C.Pattern	Area(ha)	Jan		Feb.	<u> </u>	Mar.	F	Apr.	٠	May	-	Jun.	1	Jul.		Aug.		Sep.		Oct.	Ż.	Nov.	Dec.	
i d	41	33.8	33.8	51.9	51.9	70.6	52.4	24.2	5.9		126.5 106.8		72.0	62.8	25.4	26.6 24.	4	30.3 26	26.2 6.	6.9	18.1	29.0	33.8	37.5
CP2	12	6.6	L		11:1	47			-	 	37.0	31.3	21.1	18.4	7.4	7.8	7.1	8.9 7	7.7	2.0	3.4	5.6	8.2	6.6
S	0	-	-	1 1						ļ <u></u> .			_		-	-	_							ge st
CP4	SS		-	†	-					-	182.1 153.8	53.8 1	103.7	90.3	36.6	38.3 3.	35.0 4	43.7 37	37.8 10.0					
CPS	9	4 4	5.2	8.0	7.6	8.7	8.7	7.6	0.0	-	1.6	9:0	2.5	2.0	2.0	1.7		5.1	0.4			1.7	2.5	4.1
Totai	118	48.1	_	72.6	70.6	0.7%	61.2	318	-6.8	<u> </u>	347.2 2	292.4 199.3		173.4	71.4	74.4 60	78 5.99	84.4] 72	72.1 18.9	6	21.4	8.98	44.6	51.5
		ł								Ra	peysa beysa	Rubeysa (unit: Vs)	/s)											
C.Pattern	Area(ha)	Jan.		Feb.		Mar	يا	Apr.		Mav	-	Jun	-	ם	 -	Aug		Sep.		Oct.	Z	Nov.	Dec.	
CD.	23	20.4	20.4	24.1	24.1	39.1	29.0	0.6	T	<u> </u>	2.2	54.3	5.9	32.9	13.2	12.8	11.6 11	e,	9.1	5.0	10.9	17.1	19.7	21.8
CP2	7	6.2		5.9	5.0	2.6			7	-	19.5	16.5	16.01	10.01	4.0	3.9	3.5	3.4 2.	1 8	.5	2.2	3.5	5.0	6.0
63	0	L										ļ												
CP4	34				-	.:	;		;		94.9	80.3	53.11	48.7	19.61	19.0[1.	17.2 16.	_	(3.5) 7	7.4				
Sps	3	2.4	2.8	3.3	3.	4.3	4.3	3.2		ļ	0.2	-	0.7	6.0	6.0	0.5			_			0.0	1.4	2.2
Total	1.9	29.0	29.4	33.3	32.2	46.1	33.3	12.1			178.8 151.1		100.7	92.6	37.7	36.2 3	32.4 31	[.4] 25.	.3 14.0		13.2	21.5	26.1	30.0
										Ph	mgvul	Phangvul (unit: Us)	V.)											
C.Pattern	Area(ha)	Jan	<u> </u>	Fcb.	c	M	Mar.	Apr.	1	May		Jun.		Jul	-	Aug.	~	Sen.		Oct.	Z 	Nov.	Dec	ن
G.	48	43.3	45.3	47.7	47.7	81.4	60.1	16.3			132.6 1	112.8	74.4	70.4	29.2	30.0 27.	7.5 21	80	17.3 11.	ci	23.3	36.1	41.6	45.9
CP2	14	12	12.6	11.1	9.2	5.1				1	38.7	32.9	21.7	20.5	8.5	8.7	8.0	6.4	5.0 3.	3	46	7.1	10.2	12.1
<u>S</u>	0															-	\dashv	_	_	-	_			
CP4	69								1	-	190.6	162.2 1	107.0 101.2		42.0	43.1 3	39.5	31.3 24.	.8 16.	=				
CPS	7	5.7	6.7	7.4	7.0	10.0	10.0	7.1	-		-		1.6		· I		- 1			_				
Total	138	61.7	62.7	66.1	8 59	5.96	70:11	23.4			362.0	362.0 307.9 204.8 194.7	04.8		82.3	83.9 7	75.2 5	59.5} 47	47.2 30	30.7	27.8	45.5	55.0	63.2 63.2

Thale H.2.5 Present Diversion Water Requirements (7/7)

Return Period 1/20 (Exceedance)

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		اند	8	2		84.3		160.2		A 11.0	4	7	٦		31.4		59.6			,	္ပါ	4		20.1	0.2	38.0		a	33.9	0		107	0 0 1	0.7
		₹ S	3	18.S		92.6	Çe.	179.2		٥	؟ د	1 1	?		34.6	1.0	9.99		A such	2 0	١	<u>.5</u>		21.8	1.0	42.1		Aue	36 3	9 0		ç		
	ſ	3	3	17.8		88.8	4.2	0		r	24 1	;	†		34.8	1.6	67.6	1		0 4	٠ ا	<u>2</u>		21.9	1.3	42.5		上	33.8	66	1	7 87	2 0	0 201 / 96
	[3		45.1		225.5	4.2			Ē	V 1 V	7 0	3	ال	88.5	1.6			Ē	y / 5	,	3		51.0	1.3	į,	:	Jul	0	21.9	-	L	_L_	
	-		- L	50 9		254.7 22	4.7	863.5 725.9 488.6 432.5		-	7 6 07		1		_	8.1	191.0 169.6		-	25.6	- 1		- }	52.6 5		76 7	(*)		4 75	L		186 4 162 0 106 9 107 8) 	12
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		200		76.4		.3[382.]	- 1	5 725	a (unit		Ž	\$ 03		ļ	11.0 149		338.0 284.3			Ş	- 1	<u>e</u>]	_1	79.8		174.7 150.1) i		112.7	32		9		307.0
2	Na.	217.0	710	[≳		453	2.3	863.	Lobevsa	Mav	123.5	7		į	9.//	0.8	338.0	Rubeysa		8 69			`	92.8	5	174.7	AL SY	_ 	129.7	37.8		186.4		354.0
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l		Ţ			1		6.0	7.3			19.		1	 	1	0.7	1.8			-	t		1	2 1		┪				-		L		
	Apr	53.3		1	1	1	17.7	71.0		Apr	19.9		-	\dagger	+	6.9	26.9		Ş	6 9		+	+	:	2.9	8 6		Apr.	12.0	-	**	-	6.4	18.5
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	Zar	175 8 170	j 6	1	-		1 21	2 150.		Mar.	81 50	1	-				41 59.		Mar.	31 28	1	-	_ .	. 1		33		Mar.	5 58.	÷	_	L	0	89
	_	15.	; ;	<u>.</u>	1	· 1	21.1	179.2 207.2			8	L			ľ	- 1	×1.4			383	1	Į				44.8			79.6	4.6			9.7	94.0
	၂	132.5	,	3			18.9	179.2		۹	50.3	10.7				7.7	68.3		- Feb	22.9	77	?			3.0	30.4		ا م	45.1	8.4		:	9.9	60.1
	Fcb.	132 5	0 10	0.10			19.9	117.0 184.2		Feb.	50.3	12.3		1	1	- 6	70.3		Fe	22.9	5.5		1	1	3.2	31.6		Fcb	45.1	10.3			7.0	62.5
		7 8	2 2	<u>.</u>	1		12.3	17.0			32.4	9.5			- 1	- 1	0.74			19.9	-	; ;	†		- 1	8.87	<u></u>			12.4	<u>:</u>	-	6.5	61.5
	Jan	814	17		\dagger	- 1	10.2	114.8 1	:	Jan.	32.4	9.5	-	╁	1	-1-	40.		Jan	19.9	9		╁	+	L	78.5		L		12.4			5.5	60.5
	<u>~</u>	8 501			- - 3		- -	300 11		(41 3	12	ō	105	L	Ľ	011)	23 1	<u> </u>	L	, -			70				14 1	0	69	7	
	Area(ha)	ľ				-		ň		Area(ha)	7		١.			-	-	İ	Area(ha)	7		İ	\		ľ	0	1	Area(ha)	4			9		138
	<u> </u>		-	+	+	4	+	_			_	_		-	-	1	4				_	<u> </u>	1	4	_	_	ŀ		_		_	_		
	C.Pattem	CP1	3	įį́	١			otal		C. Pattern	<u>2</u>	CP2	똢	754	Į į	<u>.</u>	10121		C.Pattern	CPI	CP2	Sec.	i	ţ	اک	local		C.Pattern	CPI	CP2	3	CP4	CPS	Total
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Table H.2.6 List of Irrigation Scheme in the Sub-Area

			Canal	Command	No. of			Water Source		Mean	Estimated
gnox	roup Code	Name of Canal	Length	Arca	Benefitted	Sub-Area	River	Catchment	Altitude	Discharge	Capacity
			(km)	(ha)	Household	:		Area (km²)	(m)	(m ³ /s)	(m ³ /s)
∢	CI	Upper Lobeysa	7.1	19	1171	Lobevsa	Taberong	119.4	1400	6.574	0.174
	ଧ	Lower Lobevsa	8.1	300	123		Chhu	119.4	1380	6.574	0.858
Ω	හ	Baio	15	143		52 Bajo	Pe Chhu	145.7	1420	8.022	0.378
U	C10	Phangwu!	16	. 91	1	42 Phangyul	Lachhu	2.23	2330	0.123	0.240
۵	CIS	Gemkha	3.5	15	23	Ε	Uship	0.84	1750	0.046	0.0-0
ш	C18	Nalakha	3.9	25	10	10 Rubcysa	Mochuna	8.78	1440	0.483	0.077
ш,	613	Rutekha	2.2	01			Takarong	3.03	1880	0.167	0.106
	020	Maphekha	2.2	27	44	=	Chhu	6.23	1760	0.343	0.071
	123	Navkovuwa	1.7	24	18			2.95	1920	0.162	0.063
	222	Rumina	ï	28	35	B		08.9	1560	0.374	0.074

Table H.2.7 Estimated River Discharge at Intake Site

													,
Code Jan Feb Mar	Fcb M	Σ	Mar	ا ا	Apr	May	Jun	Jul	Aug	Scp	ö	Nov	သို
CI				1					-				
C2 2.602 2.500 2.327	2.500		2.327	٠.	3.231	1.034	8.028	12.453	16.755	13.577	6.067	4.286	3.029
C9 3.175 3.051 2.840	3.051	3.051 2.840	2.840		3:943			15.196	20.446	16.568	7,403	5.230	3.696
CIO 0.048 0.047 0.043	0.047		0,043	:	0.060	0.075	0.150	0.232	0.312	0.253	0.113	0.080	0.056
C15 0.018 0.017 0.016	0.017 0.016	0.016			0.023	0.028	950'0	0.087	0.117	0.095	0.042	0.030	0.021
C18 0.191 0.184 0.171	0.184 0.171	0.171			0.237	0.296	0.590	0.915	1.231	0.998	0.446	0.315	0.223
CI0					1.			:					
C20				٠		:				•—-			
18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1	1		10							
0.148 0.142 0.133	0.142	0.142		-	0.184	0.230	0.457	0.709	t56 0	0.773	0.346	0.244	0.172
								4					

Table H.2.8 Irrigation Water Balance at Intake Site

Group Code Name of Canal A C1.C2 Upper Lobersa. Lower Lobersa. Available River Discharge 2.081 2.081 2.081 2.081 2.081 2.081 0.200 1.862 Shortage of Water Requirement Code Name of Canal Name of Canal Nar 0.237 0.281 0.206 Bistorage of Water Code Log 2.540 2.540 2.440 2.272 2.272 Water Requirement Code Log 2.540 2.440 2.272 2.272 Water Requirement 0.065 0.066 0.069 0.093 0.037 0.093 0.013 Could C10 Lan Feb Mar An D.033 0.035 0.011 0.033 Water Requirement C10 Lan Feb Mar An D.033 0.035 0.011 0.033 0.035 0.011 0.035 0.011 0.035 0.011 0.035 0.011 0.035 0.011 0.035 0.035	Total Command Area (ha) 1.862 2.585 2.585 3.227 0.206 0.132 0.055 0.000 1.133 Total Command Area (ha) Total Command Area (ha) Total Command Area (ha) Total Command Area (ha) Total Command Area (ha) Total Command Area (ha)	aberong Chhu Jul 6.422 9.963 9.963 0.710 0.610 0.304 Same of River Pe Chhu	Catchment Area (km²) 119.4 Aug Sep 12.404 12.404 10.865 10.865	Oct No. 4.853 3.429		
11.C2 11.C2 Code Code Code Code Code Code Code Code	361 May 2.588 2.588 3.227 0.132 0.055 0.000	1zherong Chhu Int 6.423 9.963 9.963 0.710 0.616 0.304 Name of River Pe Chhu	20 X67	ct 4,853 3.42	2	
ischarge Code Co	2,585 2,585 3,227 0,132 0,035 0,000	6.423 9.963 9.963 0.710 0.610 0.304 Name of River	10 867	4,853 3.42	2	
ischarge Code Code Code Code Code Code Code Co	2.585 2.585 3.227 0.132 0.055 0.000 Total Command Area (t Apr. 15.54 3.154 3.	6.423 9.963 9.963 0.710 0.610 0.304 Name of River	10 X67	4,853		2
Code Code Code Code Code Code Code Code	0.132 0.055 0.000 Total Command Area (t. 143 3.154 3.154 3.938 0.000 Total Command Area (t. 152 0.000)	0.710 0.616 Name of River Pe Chlu			3.429	-1
Code Code Code Code Code Code Code Code	Total Command Area (t Apr. 143 3.154 3.154 3.938 0.054 0.023 0.000 Total Command Area (t	Name of River Pe Chhu	0.326 0.302 0.350 0.313	0.108 0.000 0.071	0.1171 0.145	0.166
Code Code Code Code Code Code Code Code	Total Command Area (f. Apr. 143 - Mar. Apr. 143 - Mar. Apr. 154 3.154 3.154 3.154 3.000 0.054 0.002 0.000 Total Command Area (f. Apr. Apr. Apr. Apr. Apr. Apr. Apr. Apr	Name of River Pe Chhu				
Code Coy Coy Coy Code Clod Clod Clod Clod Clod Clod Code Code Code Code Code Code Code Co	Total Command Area (f. 143. Apr. 143. Apr. 143. Apr. 143. 3.154 3.154 3.958 0.054 0.	Name of River Pe Chhu				
Code Code Code Code Code Code Code Code	3.154 3.154 3.938 0.054 0.052 0.000 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Pc Chhu	Catchment Area (km²)			
ischarge Code Code Code Code Code Code Code Co	3.154 3.154 3.938 0.054 0.023 0.000 Total Command Area ()		7.65.7	-	You.	<u>ا</u> برا
ischarge It Code	3.154 3.154 3.938 0.054 0.023 0.000 Total Command Area ()	Inf unf	Aug	2000	2 184 2	2 057
Code Code Code Code Code Code Code Code	0.054 0.023 0.000 Total Command Area (7.837 -12.157	16.357 13.254	2.926	0.046	
Code Code Code Code Code Code Code Code	Total Command Area (ha)	0.398 0.286 0.251 0.127	0.139 0.129 0.144 0.129		-	1.
Code C10 Code C10 Code C10 Code C118 C118 Code C118 Code C118 Code C118 Code C118 Code	Total Command Area (ha)					
Code (Scharge (Cod	Total Command Area (ha)					
meharge (C10) C010 C010 C015 C015 C018 C118 C118	10	Name of River	Catchment Area (km²)			
scharge Sode Code Code Code Code Code Code Code C		Lachhu	2.23		-	
secharge Code Code Code Code Code Code Code Co	Apr	Jul	Aug	1		3
Code Cits Cits Cits Cits Cits	0.035 0.048 0.048 0.060 0.060	0.120 0.136	0.250 0.250 0.202	- 1	200	
Oode C115 C115 C128 C138	0.049 0.024 0.005 0.000 0.256	0.216 0.148 0.127 0.052	0.048 0.043 0.056 0.047	0.028 0.000 0.013)))	L
Code Code Code Code Code Code Code Code		0.097 -0.029				
Code C15 C15 C15 Vor Discharge Code C18 Code C18 Vor Discharge	A A A A A A A A A A A A A A A A A A A	-76.50 -44.700 -19.300				
Jan Feb 0.014 0.01 0.007 0.007 0.007 0.007 0.008 0.01 0.0	Total Command Area (ha)	Name of River	Catchment Area (km²)			
Jan Feb 0.014 0.014 0.014 0.015 0.007 0.007 0.008 0.01 0.01 0.014 0.01 0.014 0.01 0.014 0.01 0.01		Uship	0.84		-	
0.007 0.007 0.008 0.008 0.00 0.007 0.007 0.008 0.008 0.00 Name of Canal Nalakha Jan Feb 0.155 0.153 0.147 0.147 0.014 0.014 0.014 0.017 0.00		lul nut	Sc		<u> </u>	JI.
0.007 0.007 0.008 0.008 0.01 Name of Canal Name of Canal Name of Canal San Feb 0.155 0.153 0.147 0.147 0.014 0.014 0.017 0.016 0.00	0.0181 0	0.056 0.056 0.116 0.116	0.187 0.152	500	0.024	- 1
C18 Name of Canal C18 Nalakha Seharge 0.153 0.153 0.153 0.157 0.157 11 0.014 0.014 0.017 0.016	0.004 0.001 0.000	0,036 0,024 0.021 0.009	0.008 0.007 0.009 0.008	0.005 0.0001 0.003	0000 0000	200
C18 Name of Canal C18 Jan Feb Sechage 0.153 0.153 0.157 0.157 sechage 0.014 0.014 0.017 0.016	0.020					
Code Name of Canal C18 Jan Nalakha Var Discharge 0.153 0.153 0.147 0.147 0.115 Nater	-46.6"					
18 Jan Nalakha Charce 0.153 0.153 0.147 0.147 0.115 0.014 0.014 0.017 0.016 0.03	Total Command Area (ha)	Name of River	Catchment Area (lem*)		:	
charge 0.153 0.153 0.147 0.147 0.15 0.014 0.014 0.017 0.016 0.00	6%	Mochuna	8.78			
charce 0.153 -0.154 -0.147 -0.147 -0.014 -0.014 -0.017 -0.016	Apr May	-:1	Aug	Oct	, 75c	27.0
0.014 0.014	0.137 0.190 0.190 0.237 0.237	0.472 0.732	0.985 0.985 0.798	0.357	2.2.0	
	0.016 0.008 0.002 0.000 0.082	0.070 0.048 0.041 0.017	0.016 0.014 0.020 0.017	0.009 0.000	210.7	1_
	and the second s					
(insat) insate.	the second of the second of the second of					
Cross Code Name of Canal	- Total Command Area (ha)	Name of River	Catchment Area (km²)			
C19-22 Ruteka. Ma	the second of the second of	Takarong Chhu	8.9		None	3
	Vpr Vpr	luln	dos july.	Oct Comment	301.0	72.0
Available Recer Dechares 0.119 0.119 0.114 0.106	0.106 0.147 0.147 0.184 0.184	0.366 0.567	0.763 0.763 0.619	0,276 0.276	27.5.0	
0.056 0.057	0.066 0.035 0.010 0.000 0.337	0.286 0.198 0.168 0.072	0.066 0.059 0.080 0.069	0.000 0.000	0.040	1
	-0.153					-
No de la constante de la const	-45.4%					l

Table H.2.9 Sufficiency of Water Source and Canal Capacity

		Command	Max Water	River	Shortage	Sufficiency	Canal	Shortage	Sufficiency Estimated Estimated	Estimated	Estimated
			Sequirement	Ģ		at intake site	Capacity	of Water	at intake site	Cropping	Planting
Callal Globe Code 100.		(ha)	(S/Sm ve/J) (Nav m3/s)	` `		8	(m3/s)	(m3/s)	%	Rate (%)	Area (ha)
		/****	101.0				0.1741	-0.017	%6 -	%56	57.83
	ار	9 6	77.0				0.858	-0.084	%6-	%96	289.30
∢		000	7+6.0	; ;			030	0.00	%6-	%96	
	sub - total	361	1.155	177.5			4.V.	10.1.0		2000	
α	ဥ	143	0.451	3.938	•		0.378	-0.073	-16%]	90%	70.671
2	010	0			-0.181	-71%	0.240	-0.016	%9-	58%	52.42
ז	313	15	0.042			-46%	0.040	-0.002	%9-	72%	10.84
1		000	0.082	2.00 X 1.0	:		0.077	-0.005	%4-	% 96	27.85
IJ	ريه	7	700.0				70.0	0000	70/		
	C19	9	0.113				0.100	800.0	•		
	C20	27	0.076				0.071	-0.00	-		
ţ1.	C21	24	0.068	:			0.063	-0.005			
•	660	28	0.079				0.074	-0.005	%/-		
	Sub - total	911	·	1870	-0.153	45%	0.314	-0.023	-7%	73%	86.55
F	200	758								%98	653.81
11	Olde	00'									

Table H.2.10 Water Balance at Offtake Point of Phangyul Canal

(1) Case of Water Sufficiency 100 %

Group:	C	Code:	ClO	Na	me of Canal:	Phangyul	
er win pangrapakan an rebe ⁷ di dalah	TO THE RESERVED ASSESSMENT	Water	Available	Water	Water	Estimated	Estimated
Offiake No.	Command	Requirement	Water for	Balance -	Sufficiency	Cropping	Planting
	Area (ha)	(l/sec)	1 day (l/sec)	(l/sec)	(%)	(%)	· Area (ha)
No.1	0.36	1.025	1.025	0.000	0.00%	100.00%	0.36
No.2	0.93	2.609	2.609	0.000	0.00%	100.00%	
No.3	1.32	3,725	3.725	0.000	0.00%	100.00%	
No.1	4.12	11.596	27.587	15 991	137.90%	100.00%	4.12
No.5	1.02	2.882	27.587	24.705	857.22%	100.00%	
No.6	8.72	24.537	27.587	3.050	And the second lives and the second lives are the second lives and the second lives are the s		
No.7	14.66	41.259	27.587	-13.672	-33.14%		
No.8	20.15	56.717	27.587	-29,130	-51.36%	69.18%	13.94
No.9	2.10	5,923	27.587	21.664	365.73%		<u></u>
No.10	24,32	68.461	27.587	-40.874	-59.70%	64.18%	
No.11	4.12	11.608	27.587	15.979	137.66%	100.00%	4.12
No.12	8,99	25,300	27.587	2.287	9.04%		
Total	90.82	255.641	255.641	0.000	100.00%	80.36%	72.98
Estimated Co	ropping Rate v	vithout Manag	gement Loss	100.00%			
	ropping Rate v			80.36%			1 1 1 1
	anagement Lo			19.64%			

(2) Case of Water Sufficiency 29.4 %

Group:	C	Code:	C10	Na	me of Canal:	Phangyul	
~~		Water	Available	Water	Water	Estimated [Estimated
Offiake No.	Command	Requirement	Water for	Balance	Sufficiency	Cropping	Planting
	Area (ha)	(l/sec)	l day (l/sec)	(l/sec)	(%)	(%)	Area (ha)
No 1	0.36	1.025	1.025	0.000	0.00%	100.00%	
No.2	0.93	2.609	2,609	0,000	0.00%	100,00%	0.93
No.3	1.32	3.725	3.725	0.000	0.00%		
No.4	4.12	11.596	7.516	-4.081	-35.19%		3.25
No.5	1.02	2.882	7.516	4.634	160.78%		
No.6	8.72	24.537	7.516	-17.021	-69.37%	58.38%	<u> </u>
No.7	14.66	41.259	7.516	-33,743	-81.78%	50,93%	7.17
No.8	20.15	56.717	7.516	-49.201	-86.75%	47,95%	
No.9	2.10	5.923	7.516	1.592	26.88%		
No.10	24.32	68.461	7.516	-60.945	-89.02%		
No.11	4.12	11.608	7.516	-4.092	-35.25%	78.85%	3.25
No.12	8.99	25.300	7,516	-17.784	-70.29%	57.82%	5,20
Total	90.82	255,641	75,000	-180.641	29.34%	56.14%	50.99
Estimated Cr	opping Rate v	vithout Manag	gement Loss	57.60%			
	opping Rate v			56.14%			
	anagement Le			1.46%			

Table H.2.11 Summary of Estimated Water Management Loss

	Canal Grope	<i>P</i>	Ì	В	C	D	Е	F	Total
	Code No.	Cl	C2	C9 ·	C10	C15	C18	C19-C22	
	Command Area (ha)	61	300	143	91	15	29	119	.758
	ater Requirement (May m3/s)	0.191	0.942	0.451	0.256	0.042	0.082	0.337	2,301
Case 1	Amount of Available Water at Intake Site	0.191	0.942	0,451	0.256	0.042	0.082	0.337	2,301
	Sufficiency of Irrigation Water	100%	100%	100%	100%	100%	100%	100%	100%
	Estimated Cropping Rate without Management Loss	100%	100%	100%	100%	100%	100%	100%	100%
	Estimated Cropping Rate with Management Loss	87%	91%	89%	80%	89%	75%	79%	86%
	Estimated Management Loss	13%	9%	11%	20%	11%	25%	21%	14%
	Estimated Cropping Area (ha)	53.2	273.5	126.8	73.1	13.4	21.7	93,8	655.5
Case 2	Amount of Available Water at Intake Site	0.175	0.858	0.378	0.075	0.023	0.077	0.184	1.769
	Sufficiency of Irrigation Water	91%	91%	84%	29%	55%	93%	55%	77%
	Estimated Cropping Rate without Management Loss	95%	96%	90%	58%	72%	96%	73%	86%
	Estimated Cropping Rate with Management Loss	85%	89%	83%	56%	70%	73%	65%	79%
	Estimated Management Loss	10%	7%	7%	1%	2%	23%	8%	7%
	Estimated Cropping Area (ha)	51.7	267.6	119.2	51.1	10.5	21.2	77.8	599.1

Table H.3.1 Summary of Study Case

	***************************************	A A	B	C	[]	E	
	Case	Water	Canal	Waler	Crop	Double Paddy	Remark
No.	Code	Management	Capacity	Resource	Diversitication	Cropping	
1	0	(Present Condition				U	
2	Α	0					
3	В		•				
4	C	i		• .			
5	D-1				•		5% Diversification
6	D-2				•		10% Diversification
7	D-3				•		15% Diversification
. 8	D-4 :			:	•		20% Diversification
9	AB !	ė	•	·. !			
10	AC ·	0	: :	•		4 14 14 14	
11	AD-1	•		1.	•		5% Diversification
12	AD-2					V 1 1	10% Diversification
13	AD-3			[15% Diversification
14	AD-4						20% Diversification
15	BC		•	• • •			
16	BD-1		•		9		5% Diversification
17	BD-2		•	:	•		10% Diversification
18	BD-3		•		•	4.3	15% Diversification
19	BD-4		•		•	S. 1. 1. 1. 1.	20% Diversification
20	CD-2		. 1	•	•		5% Diversification
`-21	CD-3			N 10 ● 10 11	•		10% Diversification
22	CD-4			•	•	14.0	15% Diversification
23	CD-5		-	•	•		20% Diversification
24	ABC	•	•	1 + 1 + 1			
25	ABD-1	•	•		•		5% Diversification
26	ABD-2	•			•	4 1 1 1 1 1 1 1	10% Diversitication
27	ABD-3	• •	•		•		15% Diversification
28	ABD-4	•	•		•		20% Diversification
29	ACD-1	•		•	•		5% Diversification
30	ACD-2	0		•	9		10% Diversification
31	ACD-3	•		•	•		15% Diversification
32	ACD-4	•		•	•		20% Diversification
33	BCD-1		•	•	•		5% Diversification
34	BCD-2		•	•	•		10% Diversification
35	BCD-3		•	•	•		15% Diversification
36	BCD-4		• 1	•	•		20% Diversification
37	ABCD-2	•	•	•	•		10% Diversification for Phangyul
38	ABE-1	•	• •	•	1 2 3	•	20% Double Cropping for Bajo
39	ABE-2	• •	•	•		•	40% Double Cropping for Bajo
40	ABE-3	•	•	•	1 1 1	1 •	60% Double Cropping for Bajo
41	ABE-4	•	. ` • .	•		•	100% Double Cropping for Bajo

Note • : With Improvement Plan

Table H.3.2 Unit Construction Cost for Irrigation Improvement Plan

Work Item	Unit	Cost (Nu.)	Code
1 Earthwork			
Excavation, manual	m3	30.61	E-I
Excavation, machine	m3	45.92	E-2
Backfill, manual	m3	15.38	E-3
Backfill, machine	m3 -	23.07	E-4
Embankment, manual	m3	34.56	E-5
Embankment, machine	m3	51.84	E-6
Earth lining	m2	8.75	E-7
Gravel surfacing	m2	367.96	E-8
Gravel foundation	m3	206,60	E-9
Sand fill	m3	61.22	E-10
2 Concrete Works			
Reinforced concrete (1:2:4)	m3	1,330.73	C-1
In-situ precast concrete (1:2:4)	m3	2,358.20	C-2
Foundation concrete (1:3:6)	m3	994,38	C-3
Plain concrete	m3	1,483.75	C-4
Concrete mortar for plastering	m2 :	56,45	C-5
Wet masonry	m3	917.08	C-6
Cement Masonry (1:4)	m3	818.54	C-7
Dry masonry	m3	313.39	C-8
Form, type-1	m2	54.83	C-9
Form, type-2	m2	43.86	C-10
3 Metal Works			
Steel Flume for Aqueduct (t=4)	m2	55.13	M-1
4 Timber Works			
Wooden plunk for step log (t=50)	m2	231,33	T-1
Timber beams	m3	1,512,18	T-2
Wooden cross tai (t=20)	m3	1,626,63	T-3
5 Other Works	1 1 1 1 1 1 1		
Gabion	m3	561.76	
Concrete pipe placing (D=1,200)	m	1,685.09	P-1
Concrete pipe placing (D=900)	m	1,136.04	P-2
Concrete pipe placing (D=700)	n m	859.78	P-3
Concrete pipe placing (D=500)	m	540.00	P-1
Concrete pipe placing (D=400)	m	436,03	P-5
Concrete pipe placing (D=300)	m	306.49	P-6

Table H.3.3 Caliculation of Water Management Improvement

Canal C9	83	Bajo					and the second of	Return Period 1/2	'eriod 1/2					
	May Second	d.	1	without Wat	Water M.	ter Management Improvement	provement			with W	ater Man	with Water Management Improvement	rovement	
Offtake No. Command	Command	Water	Interval	Interval Imigation	-/+	Insufficiency	Cropping	Crop	Interval	Irrigation	\	Insufficiency		Crop
ч.	\rea (ha) -	Area (ha) Requirement	(Day)	Water (1/s)			Area (ha)	Reduction	(Dav)	Water (l/s)		•		Reduction
		(J/s)						Coefficient				:		Coefficient
No.1	0.40	1.272	1	1.272	0.000	% 00 0	0.40	100%		1.272	0.000	%00.0	0.40	100%
No.2	0.81	2.576	1	2.576	0.000	% 00 0	18.0	100%	[2.576	0.000	0.00%	0.81	100%
No.3	67.0	1.558		1.558	0.000	% 00'0	0.49	100%		1.558	0.000	0.00%		100%
No.4	0.53	1.686		1.686	0.000	%00.0	0.53	100%		1.686	0.000	0.00%	-	100%
No.5	0.61	1.940		1.940	0.000	%00:0	0.61	100%		1.940	0.000	0.00%		100%
No.6	24.67	78.461	1 1	40.943	-37.518	47.82%	18.77	94%	1.50	61.415	-17.046	-21 73%	21.99	97%
No 7	26.30	83.645	-	40.943	42.702	-51.05%	19.59	93%	1.50	61.415	-22.230	-26.58%	22.81	97%
No.8	7.10	22.581		40.943	18.362	%00.0	7.10	100%	05.0	20.472	-2.109	-9.34%		%66
No.9	15.80	50.251	1	40.943	-9.308	-18.52%	14.34	%86	1.00		-9.308	-18.52%	14,34	
No. 10	10.00	31.804	1	40.943	9.139	%00.0	10.00	100%	0.50	20.472	-11.333	-35.63%		
No.11	6.50	20.673		40.943	20.270	%00.0	6.50	100%	05.0		-0.201	-0.97%		100%
No.12	16.80	53.431		40.943	-12.488	-23.37%	14.84	%26	00.1	40.943	-12.488	-23.37%	14.84	%26
No.13	19.70	62.654	1	40.943	-21.711	-34.65%	16.29	1 %96	1.50	61.415	-1.240	-1.98%	19.51	100%
No.14	13.20	41.982		40:943	-1.038	-2.47%	13.04	100%	00.1	40.943	-1.038	-2 47%	13.04	100%
Total	142.91	454.514	6	377.520	-76.994	-16.94%	123.30	%56	00.6	377.520	-76.994	-16.94%	130.81	%86
	:			Without Manage	inagement Loss	Loss	With Mana	With Management Loss (Present Condition)	(Present	Condition)	with	with Water Management Improvement	ment Improv	ement
Expect	Expected Cropping Area	g Area		91	91.53%			86.27%	%			91.53%	33%	
Expec	Expected Cropping Loss	ssor at		36	98.15%			94.51%	%			95.81%	1%	

Table H.3.4 Summary of Case Study Result (1/3)

Name of Canal Command Area (ha) Canal Length (km)

Canal Code

Case Of Precant Condition Improvement Improvement MR (Ms) Canal Case A Production of 0.36 Case A Canal Case A Improvement Improvement Case A Case B Case A Case B Ca		Bajo Canal	1	143	The second of the	15						
Paddy Upland W.R. (1/s) Capacity (Us) Summor Winter Value (1000 Nu.) Benefit Nct Cost Rational Reservation 0.36 0.24 -452 378 77% 100% 1.544 114 63 0.36 0.024 452 378 87% 100% 1.454 114 63 0.65 0.43 251 261 87% 100% 1.454 114 60 0.65 0.43 251 261 97% 100% 1.454 97 0.56 0.43 251 261 97% 100% 1.452 22 0.56 0.43 241 250 89% 100% 1.452 23 0.56 0.45 241 250 89% 100% 1.574 24 0.56 0.45 241 250 89% 100% 1.451 114 0.56 0.24 416 378 81% 100% 1.45	ŀ	Improvement	Irrigation	Efficiency (Maximum	Canal	Productio	n Ratio	Net Production	Expected (1	000 Nu)	B/C
0.36 -0.24 452 378 77% 100% 1,340 1 0.36 -0.24 452 378 87% 100% 1,454 114 63 0.65 0.43 251 261 87% 100% 1,454 114 60 0.65 0.43 251 261 97% 100% 1,454 114 60 0.56 0.43 251 261 97% 100% 1,454 114 60 0.56 0.43 251 260 97% 100% 1,472 13 85 0.65 0.43 241 250 99% 100% 1,473 114 60 0.65 0.43 240 99% 100% 1,457 114 60 0.65 0.44 416 378 81% 100% 1,457 114 60 0.65 0.44 416 378 99% 100% 1,457 114 </th <th></th> <th>Item</th> <th>Paddy</th> <th>Upland</th> <th>W.R. (1/s)</th> <th>Capacity (Vs)</th> <th>Summer</th> <th>Γ—</th> <th>Value (1000 Nu.)</th> <th></th> <th>Net Cost</th> <th>Ratio</th>		Item	Paddy	Upland	W.R. (1/s)	Capacity (Vs)	Summer	Γ—	Value (1000 Nu.)		Net Cost	Ratio
0.36 0.24 452 378 87% 100% 1,454 114 63 0.65 0.43 251 261 87% 100% 1,454 114 60 0.65 0.43 251 261 97% 100% 1,568 228 97 0.65 0.43 251 261 97% 100% 1,345 97 97 0.56 0.24 434 378 90% 100% 1,451 122 79 0.65 0.43 241 250 98% 100% 1,451 114 22 0.65 0.43 241 250 98% 100% 1,451 114 22 0.36 0.24 416 378 92% 100% 1,452 114 22 0.45 0.45 231 240 90% 100% 1,452 114 22 0.65 0.24 416 378 82% 100%		Present Condition	0.36	0.24	452	378	%//	100%	1,340			
0.65 0.43 251 261 87% 100% 1.454 114 60 0.65 0.43 251 261 97% 100% 1.568 228 97 0.36 -0.24 434 378 90% 100% 1.472 133 85 0.56 0.24 434 250 89% 100% 1.472 133 85 0.65 0.43 241 250 89% 100% 1.451 122 79 0.65 0.43 241 250 99% 100% 1.451 114 . 0.65 0.24 416 378 81% 100% 1.457 114 . 0.36 0.24 416 378 82% 100% 1.457 114 . 0.65 0.43 231 240 99% 100% 1.457 114 . 0.65 0.43 231 240 99% 100%		only Management	0.36		452	378	81%	100%	1,454		63	1.81
0.65 0.43 251 261 97% 100% 1.568 228 97 0.36 0.24 424 378 99% 100% 1.549 9 22 0.56 0.24 434 378 90% 100% 1.472 133 85 0.65 0.24 424 250 99% 100% 1.461 122 79 0.65 0.24 416 378 81% 100% 1.574 234 114 0.65 0.24 416 378 81% 100% 1.457 13 82 0.36 0.24 416 378 82% 100% 1.457 114 76 0.65 0.43 231 240 99% 100% 1.457 114 76 0.65 0.43 220 240 99% 100% 1.457 114 76 0.65 0.43 220 235 100% 1.457 <td></td> <td>only Canal</td> <td>0.65</td> <td>0.43</td> <td>251</td> <td>261</td> <td>87%</td> <td>100%</td> <td>1,454</td> <td></td> <td>09</td> <td>1.90</td>		only Canal	0.65	0.43	251	261	87%	100%	1,454		09	1.90
0.36 0.24 434 378 79% 100% 1.349 9 22 0.36 0.24 434 378 90% 100% 1.472 133 85 0.65 0.43 241 250 89% 100% 1.461 122 79 0.65 0.43 241 250 99% 100% 1.457 134 21 0.36 0.24 416 378 81% 100% 1.457 134 22 0.36 0.24 416 378 81% 100% 1.457 135 82 0.36 0.45 231 240 99% 100% 1.457 114 76 0.65 0.45 231 240 99% 100% 1.271 49 124 0.65 0.45 232 240 100% 1.271 49 124 0.65 0.45 220 235 100% 1.378 36		Canal & Management	0.65	0.43	251	261	%L6	100%	1,568		126	2.34
0.56 0.24 434 378 90% 100% 1,472 133 85 0.65 0.43 241 250 89% 100% 1,461 122 79 0.65 0.43 241 250 99% 100% 1,574 234 114 0.65 0.24 416 378 81% 100% 1,457 18 22 0.65 0.43 251 240 99% 100% 1,457 117 76 0.65 0.43 251 240 99% 100% 1,457 117 76 0.65 0.43 251 240 99% 100% 1,457 114 76 0.65 0.43 251 240 99% 100% 1,378 39 85 0.65 0.43 250 278 100% 1,378 39 85 0.65 0.43 220 225 88% 100% 1,417 <td></td> <td>only 5% Diversification</td> <td>0.36</td> <td>0.24</td> <td>434</td> <td>378</td> <td>266</td> <td> %00I</td> <td>1.349</td> <td>:</td> <td>22</td> <td>0.42</td>		only 5% Diversification	0.36	0.24	434	378	266	%00I	1.349	:	22	0.42
0.65 0.43 241 250 89% 100% 1,461 122 79 0.65 0.045 241 250 99% 100% 1,574 234 114 0.65 0.24 416 378 81% 100% 1,479 139 82 1 0.36 0.24 416 378 92% 100% 1,479 139 82 1 0.65 0.24 416 378 92% 100% 1,477 114 76 0.65 0.043 231 240 99% 100% 1,271 -69 22 0.56 0.024 337 378 83% 100% 1,378 39 85 0.65 0.43 220 235 87% 100% 1,317 78 106 0.65 0.43 220 235 88% 100% 1,314 -96 22 0.36 0.24 379 378		Management & 5% Div.	0.36	0.24	434	378	%06	100%	1,472		85	1.57
0.65 0.43 241 250 99% 100% 1.574 234 114 0.36 0.24 416 378 81% 100% 1.479 139 82 1 0.36 0.24 416 378 92% 100% 1.479 139 82 1 0.65 0.43 231 240 99% 100% 1.457 117 76 0.65 0.43 231 240 99% 100% 1.271 49 104 0.56 0.24 397 378 85% 100% 1.378 39 85 0.65 0.43 220 235 87% 100% 1.310 -30 74 0.65 0.43 220 235 88% 100% 1.314 -96 22 0.36 0.24 379 378 96% 100% 1.345 5 75 0.36 0.45 210 221	1	Canal & 5% Diversification	0.65	0.43	241	250	%68	100%	1,461	122	161	1.55
0.36 0.24 416 378 81% 100% 1.357 18 22 0.36 0.24 416 378 92% 100% 1.457 117 76 0.65 0.24 416 240 99% 100% 1.457 117 76 0.65 0.43 231 240 99% 100% 1.271 -69 21 0.36 0.24 397 378 83% 100% 1.271 -69 22 0.36 0.45 220 235 87% 100% 1.310 -30 74 0.65 0.45 220 235 87% 100% 1.310 -30 74 0.36 0.24 379 378 85% 100% 1.345 -30 22 0.36 0.45 210 221 93% 100% 1.345 -30 22 0.65 0.45 210 221 100% 1.382 <td></td> <td>Canal, Management & 5%</td> <td>0.65</td> <td>0,43</td> <td>241</td> <td>250</td> <td>%66</td> <td>100%</td> <td>1,574</td> <td></td> <td>114</td> <td>2.05</td>		Canal, Management & 5%	0.65	0,43	241	250	%66	100%	1,574		114	2.05
0.36 0.24 416 378 92% 100% 1.479 139 82 1 0.65 0.43 231 240 90% 100% 1.457 117 76 0.65 0.43 231 240 99% 100% 1.271 69 22 0.36 0.24 397 378 83% 100% 1.271 69 22 0 0.56 0.43 220 235 87% 100% 1.310 -30 74 0 0.65 0.43 220 235 87% 100% 1.310 -30 74 0 0.65 0.43 378 85% 100% 1.244 -96 22 0 0.36 0.45 210 221 95% 100% 1.345 5 75 0 0.56 0.43 210 221 95% 100% 1.345 22 73 0 0.65 <td>1</td> <td>only 10% Diversification</td> <td>0.36</td> <td></td> <td>416</td> <td>378</td> <td>%18</td> <td>300%</td> <td>1.357</td> <td></td> <td>22</td> <td>0.81</td>	1	only 10% Diversification	0.36		416	378	%18	300%	1.357		22	0.81
1 0.65 0.43 231 240 90% 100% 1.457 117 76 0.65 -0.43 231 240 99% 100% 1.556 217 114 0.36 -0.24 397 378 83% 100% 1.271 -69 22 1 0.65 0.24 397 378 94% 100% 1.310 -30 74 0.65 0.43 220 235 87% 100% 1.417 78 106 0.36 0.24 379 378 96% 100% 1.244 -96 22 0.36 0.24 379 378 96% 100% 1.345 5 75 0.65 0.43 210 221 95% 100% 1.347 -26 75 0.65 0.45 210 221 100% 1.317 -22 73 0.65 0.45 210 221 100%	r .	Management & 10% Div.	0.36	0.24	416	378	95%	100%	1,479	1 117 11	82	1.71
0.65 0.43 231 240 99% 100% 1.556 217 114 0.36 0.24 397 378 83% 100% 1.271 -69 22 0.36 0.24 397 378 99% 100% 1.378 39 85 0.65 0.43 220 235 98% 100% 1.417 78 106 0.36 0.24 379 378 96% 100% 1.244 -96 22 0.56 0.24 379 378 96% 100% 1.345 5 75 0.65 0.45 210 221 95% 100% 1.345 5 75 0.65 0.45 210 221 100% 1.317 -22 73 0.65 0.45 210 221 100% 1.382 42 104		Canal & 10% Diversification	59.0	0.43	231	240	%06	100%	1,457		92	1.55
0.36 0.24 357 378 83% 100% 1.271 -69 22 1 0.36 0.24 397 378 94% 100% 1.378 -69 22 2 0.65 0.43 220 235 87% 100% 1.417 78 106 0.36 0.24 379 378 85% 100% 1.244 -96 22 0.36 0.24 379 378 96% 100% 1.345 5 75 1 0.65 0.43 210 221 93% 100% 1.317 -22 73 0.65 0.45 210 221 100% 1.382 42 104		Canal. Management & 10%	0.65	0.43	231	240	%66	100%	1.556		114	1.90
0.36 0.24 397 378 94% 100% 1.378 39 85 0.65 0.43 220 235 87% 100% 1.310 -30 74 0.65 0.43 220 235 98% 100% 1.417 78 106 0.36 0.24 379 378 85% 100% 1.244 -96 22 1 0.56 0.45 210 221 95% 100% 1.345 5 75 0 0.65 0.45 210 221 100% 1.382 42 104		only 15% Diversification	95.0	0.24	262	378	%£8	100%	1,271	69-	22	-3.18
0.65 0.43 220 255 87% 100% 1.310 -30 74 0.65 0.43 220 235 98% 100% 1.417 78 106 0.36 0.24 379 378 85% 100% 1.244 -96 22 1 0.56 0.24 379 378 96% 100% 1.345 5 75 1 0.65 0.43 210 221 93% 100% 1.317 -22 73 0.65 0.45 210 221 100% 1.382 42 104		Management & 15% Div.	0.36	0.24	265	378	%16	%001	1,378		85	0.46
0.65 0.45 220 235 98% 100% 1.417 78 106 0.36 0.24 379 378 85% 100% 1.244 -96 22 1 0.36 0.24 379 378 96% 100% 1.345 5 75 1 0.65 0.43 210 221 93% 100% 1.317 -22 73 0.65 0.45 210 221 100% 1.382 42 104		Canal & 15% Diversification	0.65	0.43	220	235	%18	100%	1,310		17	-0.40
0.36 0.24 379 378 85% 100% 1.244 -96 22 1 0.36 0.24 379 378 96% 100% 1.345 5 75 1 0.65 0.43 210 221 93% 100% 1.317 -22 73 0.65 0.45 210 221 100% 100% 1.382 42 104		Canal. Management & 15%	0.65	0.43	220	- 535-	% 86	100%	1,417		106	0.73
0.36 0.24 379 378 96% 100% 1.345 5 75 1 0.65 0.43 210 221 95% 100% 1.317 -22 73 0.65 0.45 210 221 100% 1.382 42 104		only 20% Diversification	0.36	0.24	3.26	378	%58	%001	1,244		22	-4.45
1 0.65 0.43 210 221 93% 100% 1.317 -22 73 0.65 0.43 210 221 100% 100% 1.382 42 104		Management & 20% Div.	0.36	0.24	379	8.4€	%96	100%	1,345		75Ì	0.07
0.65 0.43 210 221 221 100% 100% 1.382 42 104	- 1	Canal & 20% Diversification	9.0	0.43	210	221	%56	100%	1.317		73	-0.31
	_	Canal, Management & 20%	9.0	\$10	210	221	%00I	300%	1.382		104	0.40

Table H.3.4 Summary of Case Study Result (2/3)

	Name of Canal	Command Area (ha)	Arca (ha)	Canal L	Canal Length (km)						
Pha	Phangvul	6	91		.16						
Impre	Improvement	Irngation Effic	Efficiency	Maximum	Canal	Production Ratio	on Ratio	Net	Expected (1000 Nu)	1000 Nu)	B/C
# · · · ·	Item	Paddy	"Upland"	W.R. (1/s)	Capacity (I/s)	Summer	Winter	Output	Benefit	Cost	Ratio
Present Condition	tion	0.36	0.24	255	240	38%	818	421			
only Management	nent	0.36	0.24	255	240	45%	71%	208	98	52	1.67
only Canal	1	0.65	0.43	145	149	51%	76%	587	166	150	1.11
Canal & Management	nagement	0.65	0.43	142	671	57%	%86	694	272	187	1.46
only Water source	ource	0.36	0.24	255	240	46%	%69	531	110	164	0.67
Managemer	Management & Water source	92.0	0.24	255	240	23%	%56	959	235	223	1.05
Canal & Water source	ater source	6.65	0.43	142	149	29%	95%	669	278	314	0.89
Manageme	Management, Canal & W.S	0.65	0.43	142	149	72%	100%	808	387	351	1.10
only 5% D	only 5% Diversification	0.36	0.24	243	240	39%	51%	424	2	20	0.15
Managem	Management & 5% Div.	0.36	0.24	243	240	43%	72%	513	92	72	1.28
Canal & 2	Canal & 5% Diversification	0.65	0.43	135	143	52%	77%	591	170	162	1.05
Canal, M	Canal. Management & 5%	0.65	0.43	135	143	%65	%86	702	280	218	1.28
01 vino	only 10% Diversification	0.36	0.24	232	240	39%	%15	420	-1	20	-0.07
Manager	Management & 10% Div.	0.36	0.24	232	240	%6†	%9L	562	141	72	1.96
Canal &	Canal & 10% Diversification	0.65	0,43	671	136	53%	17%	593	171	155	1.11
Canal. N	Canal. Management & 10%	59'0	0.43	129	136	1 %09	%86	702	281	208	1.35
enly 15%	only 15% Diversification	0.36	0.24	220	240	%0 +	51%	394	-28	20	-1.37
Manager	Management & 15% Div.	0.36	0.24	220	240	46%	72%	161	701	72	0.97
Canal &	Canal & 15% Diversification	0.65	0.43	122	130	83%	77%	645	127	150	0.85
Canal: N	Canal. Management & 15%	69.0	0.43	122	130	%59	%66 ···	674	252	202	1.25
only 20%	only 20% Diversification	0.36	0.24	209	240	%[†	%15	385	95-	20	-1 77
Managen	Management & 20% Div.	0.36	0.24	209	240	41%	72%	181	[09	 15 9	0.93
Canal &	Canal & 20% Diversification	0.65	0.43	116	124	26%	11%	248	126	147	0.80
Canal, M	Canal. Management & 20%	0.65	5+70	911	12+	··· 63%	%66	652	230	161	1.17
Water son	Water source & 10% Div.	0.36	0.24	232	24()	%6±	%07	775	123	181	0.67
Managen	Management, W.S.& 10% Div	0.36	0.24	232	240	.62%	%56	707	586	243	1.18
Canal, W	Canal, W. source & 10% Div.	0.65	[.: 0°t3]	129	951	26%	%96	899	247	334	0.74
W.M.: Car	Case ABCD-2 [W.M.: Canal, W.S & 10% Div.	0.65	0.43	.129	136	26%	100%	820	399	371	1.07

Canal Code Name of Canal Command Area (lus) Canal Length (km)

C9 Bajo Canal 143

Cave E. Ambiring Double Padey Cropping

ſ		اج	20		ΞĪ	Ϋ́	::1	्रा	न्ना	ᆵ	g	555	522	\$55	591	7	<u>%</u>	9	ç, l	8	ह्रा	60,
	Paddy	Product. (1)	. 338	381		425	441		461	501			52	· · · · · · · · · · · · · · · · · · ·							099	
	<u>ာ</u>	Ratio		181	1.90	2,34	2.09	4.5	1.99	2.59	2.16	2.79	2.21	2.81	2.08	2.70	225	2.69	0.74	1.19	26.0	*
	00 Nu)	Net Cost		63	09	26	33	99	75	81	5.5	69	. 53	69	99	69	43	65		71	53	3
	Expected (1000 Nu)	Benefit ?		114	114	228	- 88	162	114	210	118	192	1 :8	761	136	188	96	174	95	4%	52	S
	Net Production	Value (1000 Nu.)	1.340	1.454	1,454	1,568	1.408	1,502	1.454	1.550	1,458	1.532	1,458	1,532	1,476	1.528	1.436	1.514	1.396	1,424	1,392	1001
	Net P	_	 				100001	100%	0.000 t	1000%	100%	100%	100%	0.0001	1000.001	100%	100%	100%	9,000	0,000	10000	1000
	atio	Paddy Winter	_	 - -		_	100001	100001	100001	100001	1000	10000	1 00001	1000	1000	10000	9900 1	1000°o 1	9900	100% I	980 1	1000
	Estimated Production Ratio	1st Paddy 2nd Paddy		 -			9200	9500	0.056	086	9056	0.086	0.056	086	0.056	1000	8000	0.86	0016	980ء	900°	0,-0
The second of th	Estimated I	Winter 18	1000%	1000%	10000	100%	10000	. 100°o	100%	100°a	10000	1000.0	100001	1000	986	10000	9500	10000	9300	0,066	9500	900
		Summer	7.70.0	87%	8700	97%	820°0	0.026	87°°	0.026	0.028	0.026	0.04X	0.626	0.26	1000	870	00£6	0 %6°	1000	0016	1000
	Canal	s) Capacity (l/s)	378	378	261	261	378	378	240	240	378	378	210	210	3.78	378	190	061	378	378	017	214
	Maximum		452	452	25.1	251	134	434	234	234	91*	416	210	210	397	397	186	186	379	379	205	2,76
Cropping	Impation Efficiency Maximu	Upland	0.24	0.24	0.43	0.43	0.24	0,24	0.43	0.43	0.24	0.24	0.43	0.43	0.24	0.24	0.43	0,43	0.24	0.24	0.43	;;
uble Padev	Impation	Paddy	0.36	0.36	0.65	0.65	0.36	0.36	0.65	0.65	0.36	0.36	\$90	990	0.36	0.36	-0.65	1 0.65	0.36	0.36	59.0	
Case E Applying Double Paddy Cropping	Improvement					reement	ible Paddy C.	220% D.P.C	D.P.C.	ement & 20%	ible Paddy C.	% 40% D.P.C	D.P.C.	Canal. Management & 40°0	only 60% Double Paddy C.	Management & 60% D.P.C	D.P.C.	Canal. Management & 60%	only 100% Double Paddy C.	Management & 100% D.P.C.	D.P.C.	
Ų	cm)		Process Condition	loniv Vanavement	only Canal	Canal & Management	only 20% Double Paddy C.	Management & 20% D.P.C	Canal & 20% D.P.C.	Canal. Management & 20%	only 40% Double Paddy C.	Management & 40% D.P.C	Canal & 40% D.P.C.	Canal, Manag	only 60% Dou	Management	Canal & 60% D.P.C.	Canal, Manag	only 100% De	Management	Canal & 100% D.P.C.	
	Case		C sac O	Case O	Case B	Case AB	Case F-1	Case AE-1	Cate RE-1	Case ABF-1	Case E-2	Case AE-2	Case BE-2	Case ABE-2	Case P.3	Case AE-3	Case BE-3	Case ABE-3	Case E-4	Case AE4	Case BE-4	