Appendix E Water Supply Development Study

FEASIBILITY STUDY ON



FINAL REPORT VOLUME III SUPPORTING REPORT

Appendix E: Water Supply Development Study

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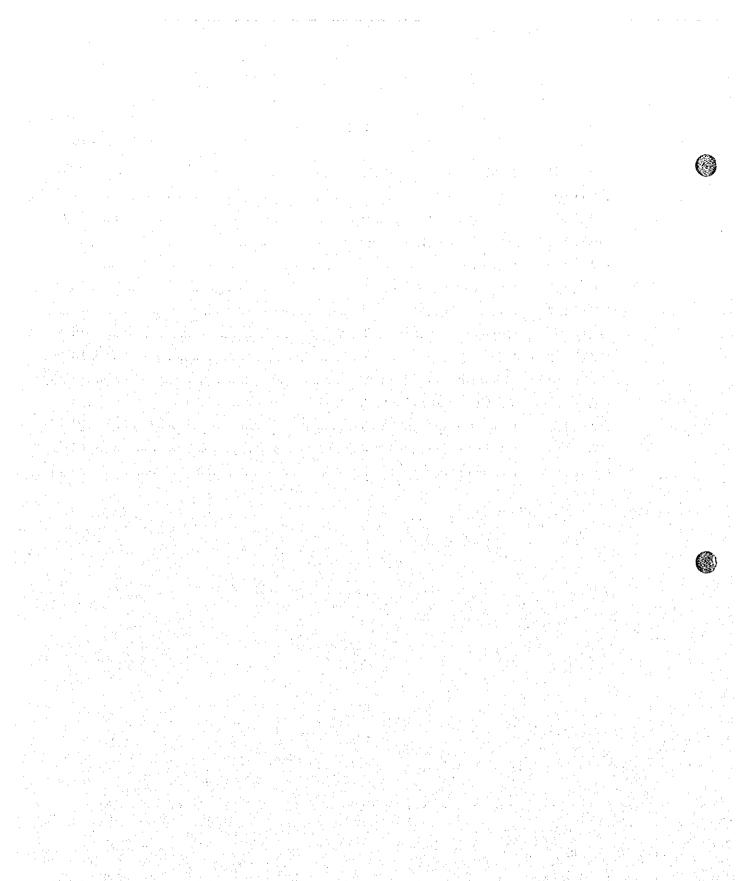
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APPENDIX E WATER SUPPLY DEVELOPMENT STUDY

E1 New Irrigation Scheme

E1.1 Present Condition of the Study Area

(1) Study Area

The Study Area conforms to the new command area identified and proposed in the Pre-Feasibility Study (Pre-F/S).

Investigating the land capability of the new command area as referred to the report of Pre-F/S, the Study Area was classified into four (4) land classes as shown in Figure E1.1. Acreages by the land classes are indicated in Table E1.1, in which crop suitability for each product is referred to. For the crop suitability presented in the table, it is presumed that no crops are suited under the lands classed below IV unless some improvements are taken.

Farm size and farm owned were estimated in consideration of data obtained from the Agricultural Census (1990) and revenue records of concerned tehsils. The result is given in Table B1.2.

(2) Present Cropping Pattern

Present cropping pattern and intensity in the Study Area were determined from a recent series of Agricultural Statistics of NWFP, and revenue records of concerned tehsils in the Study Area. Through an investigation on agricultural data in barani areas of concerned tehsils in the Agricultural Statistics of NWFP, cropping intensity in the proposed area was obtained as shown in Table E1.3, based upon result by each administrative division as Table E1.4 to E1.7.

Furthermore, the latest three (3) years revenue records of concerned tehsils which cover 46.6% of Study Area were collected and utilized for the estimation of the present cropping pattern and intensity of the Study Area. Land breakdown of the Study Area is shown in Table E1.8, while agricultural status by left and right banks of Study Area obtained are shown in Table E1.9 and Table E1.10.

(3) Others

Present yields were estimated by the existing series of Agricultural Statistics of NWFP as shown in Table E1.11.

Latest whole-sale prices by crops in the Study Area were investigated as shown in Table E1.12. According to the table, large seasonal fluctuation was observed in the sequences of price of vegetables and fruits while the data of cereals were stable.

E1.2 Irrigation Development Plan

(1) New Command Area

It was unveiled that some portions of the new command area might be eliminated because farm lands are not fully arable and some overlap with the other existing irrigation plan and system. The command area partly covered by the Palai Dam Irrigation Scheme should be adjusted to avoid double development, having respect for that the Palai Dam Irrigation Project is a preceded scheme within the New command area of the Project. In due consideration of the fact that the implementation of the Palai Dam scheme is being suspended, it was proposed and agreed by GONWFP that the right bank of Jindai Khwar be covered by the Munda Dam Multipurpose project while the irrigation area of the Palai Dam scheme is extended westward. By this adjustment, the planned right canal of Palai Dam scheme will be added to the end of the left canal.

At the right bank a portion of the Study Area was found to be overlapping with the command area of the existing Warsak Left Irrigation Canal. However, the canal beyond 18.2 km from off-take was found to have not been functioning for a long time due to blockade of canal structure. Thereby, the canal command of the Warsak scheme is being limited within the right bank of Subhan Khwar at present. As there was no plan established for the restoration of this structure, and no budget is being allocated, it was proposed that the left bank command area of the Subhan Khwar be transformed as the command area for the Munda Dam Multipurpose Project, in which case a new canal will be aligned at higher elevations than the existing left bank canal of Warsak scheme, beyond Subhan Khwar. This was accepted by GONWFP.

Target area of new irrigation scheme of the Munda Dam Multipurpose Project is major rainfed farmlands extending in both banks of the Swat river. Adjusted new command area is summarized below.

Area of the New Irrigation Scheme

[ha(Acre)] (GCA) (CCA) 4,066 (10,050)4,539 (11,220)Left Bank Area 2,314 (5,720)2,043 (5,050)Right Bank Area 6,109 (15,100)6,853 (16,940)Total

Area of the new irrigation scheme was classified into four land classes as shown in Table E1.13. In this regard, a portion of 883 ha (2,180 acre) at the left bank was classified below Class III, due to it's gravely nature. It must be made arable by eliminating gravels.

(2) Proposed Cropping Pattern

Keeping in view the existing conditions and recorded performance in the existing Irrigation Scheme and farmers desire, the cropping pattern and intensity are proposed as follows:

Proposed Cropping Pattern and Intensity

Crops	Intensity(%)	Crops	Intensity(%)
Kharif		Rabi	
Maize	27	Wheat	30
Vegetables	8	Oilseeds	2
Pulses	4	Onion	6
Fodder	3	Vegetables	7
Tobacco	6	Fodder	3
Sugarcane	30	Sugarcane	(30)
Orchards	8	Orchards	(8)
Subtotal	86	Subtotal	48
		Total	134

Sugarcane is the most attractive and desirous crop of farmers at the moment. However, taking a big fluctuation of product prices and so on into consideration, intensity of sugarcane was reduced to 30% from the intensity of 35% proposed in Pre-F/S. Sugarcane is proposed to be planted once and then applied ratoon in the following two years as same as Swabi area.

The following table compares quantities of required water and profits between the proposed plan and actual records of Charsadda which is the major district belonging to the new irrigation development area. It shows that the proposed cropping pattern holds sound profitability and practicability.

Expected Yield of the Proposed Cropping Pattern

Pre-F/S				F/S		Actual Values in Charsadda			
Crop/items	Crop	Water	Yield	· Crop	Water	Yield	Crop	Water	Yield
	Intensity	Requirement		Intensity	Requirement		Intensity	Requirement	
	(%)	(mm)	(Rs./ha)	(%)	(mm)	(Rs./ha)	(%)	(n1m)	(Rs./ha)
Maize	29.0	118.55	148,120	27.0	110.38	137,910	27.3	111.50	139,340
Vegetables	6.0	47.63	289,600	8.0	63.51	386,130	0.9	7.15	43,440
Pulses	0.0	0.0	0	4.0	25.09	41,510	0.2	1.00	1,660
Fodder	3.0	15.44	36,570	3.0	15.44	36,570	0.9	4.84	11,460
Tebacco	6.0	43,47	503,470	6.0	43.47	503,470	10.3	74.33	860,930
Sugarçane	35.0	383.32	892,880	30.0	328.56	765,330	42.9	469.40	1,093,400
Orchards	5.0	54.20	375,070	8.0	86.71	600,100	2.0	22.11	153,030
Rice	0	0.0	0	0.0	0.0	0	0.2	2.38	34
R.Wheat	35.0	57.19	501,880	30.0	49.02	430,180	36.2	59.09	518,510
R.Barley	0.0	0.0	0	0.0	0.0	0.0	0.5	0.83	4,400
R.Oil seeds	2.0	7.31	10,540	2.0	7.31	10,540	0.1	0.33	470
R.Onion	1.0	4.03	52,140	6.0	24.19	312,850	0.1	0.28	3,650
R. Vegetables	4.0	9.87	155,190	7.0	17.28	271,580	1.3	3,31	51,990
R.Fodder	3.0	9.13	42,790	3.0	9.13	42,790	8.6	26.03	121,950
R.Sugarbeet	8.0	44.70	177,320	0.0	0.0	0	0.5	3.02	11,970
Total	1	794.84	3,185,560		780.09	3,538,950	<u> </u>		3,016,220

Comparison results of cropping pattern with those of adjacent districts are also presented as reference as follows:

Comparison with Other Cropping Patterns

(%)

	Munda	Project		Records in a	djacent area	
Crops	Pre-F/S	F/S	Charsadda	Malakand	Peshawar	Mohmand
Maize	29.0	27.0	27.3	16.0	26.2	28.4
Vegetables	6.0	8.0	0.9	1.3	1.3	1.5
Pulses	0.0	4.0	0.2	0.2	0.1	0.4
Fodder	3.0	3.0	0.9	7.7	10.7	0.7
Tobacco	6.0	6.0	10.3	2.8	0.0	0.0
Sugarcane	35.0	30.0	42.9	14.3	28.8	31.4
Orchards	5.0	8.0	2.0	1.6	1.3	1.3
Rice	0	0.0	0.2	20.1	0.6	0.0
R.Wheat	35.0	30.0	36.2	28.0	46.6	53.5
R.Barley	0.0	0.0	0.5	0.1	2.3	0.6
R.Oil seeds	2.0	2.0	0.1	0.3	0.1	0.4
R.Onion	1.0	6.0	0.1	0.7	0.2	6.6
R. Vegetables	4.0	7.0	1.3	3.2	2.2	1.6
R.Fodder	3.0	3.0	8.6	4.1	11.7	1.1
R.Sugarbeet	8.0	0.0	0.5	0.0	2.9	0.0
Water Rq. (mm)	794.8	780.1	785.6	662.1	649.3	615.4
Yield (103Rs./ha)	3,185,6	3,539.0	3,016.2	1,582.0	2,172.8	2,321.9

E2 Irrigation Water Requirement

In the Pre-F/S report, irrigation water requirement for the Study Area was calculated at 145,626 AF (179,629,700 cu.m) per 29,380 acres (1,510.8 mm) with 180% cropping intensity. Calculation of the irrigation water requirement was updated. Reference evapotranspiration (ETo) was re-calculated as shown

in Table E2.1. Estimated ETo of 1,694 mm was arrived at. Unit irrigation water requirement by crops were computed as shown in Table E2.2, being summarized in Table E2.3. Assuming irrigation efficiency at 0.54 (applying three components, Canals: 0.85, Watercourses: 0.85, Field: 0.75), irrigation height of 1,518 mm was obtained.

E3 Civil Canals

There are a number of civil canals along the Swat River downstream of the existing Munda Headworks. Due to meandering of the Swat river flowing down on alluvial fan, some civil canals were abandoned. For these reasons it is difficult to identify exact number of civil canals steadily functioning. Through the field reconnaissance and hearing from the farmers, 14 civil canals have been confirmed to be functional and continuously maintained by those beneficiaries. Location of functional civil canals is shown in Figure E3.1.

E4 Coordination on the Palai Dam Irrigation Scheme

Irrigation plan of the Palai Dam scheme is summarized as follows:

Right Bank Area Total Unit Left Bank Arca Items 4,600.0 1,000.0 3,600.0 Command Area Acres 11.074.3 2,407.5 8,666.8 Irrigation Water amount ΑF 30.0 23.5 6.5 Peak Discharge Cusecs 53,705.0 38,450.0 11,500.0 feet Canal length (inc. Feeder Canal)

Irrigation Plan of the Palai Dam Scheme

While an irrigation efficiency of 0.70 was applied in the Palai Dam scheme instead of 0.54 for the Munda Project, irrigation height of 733.8 mm was proposed. High-grade irrigation will be realized in the command area of Munda Dam Project in comparison with the Palai Dam scheme. Gap in the irrigation intensities between the Palai Dam scheme and Munda Dam Project can be satisfied by additionally supplying water from the proposed left bank canal of the Munda Project to the reservoir of the Palai Dam.

E5 Crop Budget Analysis

Crop budget analysis by crops presently harvested and proposed to be introduced under the condition of with-project, was conducted. Crop production budget per acre with and without project by crops were analyzed as shown in Table E5.1. Agricultural benefits assuming command area of 6,109 ha (15,100 acres) were

TABLES

Table E1.1 Command-wise Statistics of Land Capability Classes

Survey Area in Chapter 5 of Pre-feasibility Report: (Unit: Acres)

Land Class	Right	Bank	Left Bar	ık	Total	
Ī	 8,360	61%	5,455	16%	13,815	29%
IIr	0	0%	4,790	14%	4,790	10%
IIsr	0	0%	660	2%	660	1%
IIIs	3,340	24%	4,010	12%	7,350	16%
IIIsr	315	2%	3,620	11%	3,935	8%
IV sr	0	0%	12,730	38%	12,730	27%
Misc.areas	1,780	13%	2,100	6%	3,880	8%
Total	 13,795		33,365		47,160	

Study Area in Chapter 6 of Pre-feasibility Report: (Unit: Acres)

	Land Class	Right	Bank	Left l	Bank	Tot	al
		(GCA)	(CCA)	(GCA)	(CCA)	(GCA)	(CCA)
,	I	4,974	4,391	4,165	4,052	9,139	8,443
	Ilr	0	0	3,428	3,335	3,428	3,335
	llsr	0	0	660	642	660	642
	IIIs	3,340	2,949	3,530	3,442	6,870	6,391
, ,	Illsr	315	278	2,884	2,806	3,199	3,084
	IVsr	0	0	6,116	4,253	6,116	4,253
	Misc.areas	1,482	1,482	1,750	1,750	3,232	3,232
	Total	10,111	9,100	22,533	20,280	32,644	29,380

Crop Suitability of the Land in Command Area:

Land Class I	llr	IIsr	Ills	Illsr	IVsr	Misc.areas
(Unit: Acres) 8,443	3,335	642	6,391	3,084	4,253	3,232
Wheat 1	1	.1	2	2	4	4
Sugarcane 1	1	1	3	3	4	4
Sugarbeet 1	1	1	2	2	4	4
Maize 1	1	\sim 1 \sim	3	3	4	4
Tabacco 1	1	1	2	2	4	4
Oil-seeds 1	1	1	2	2	4	4
Opulses 1	1	1	2	2	4	4
Fodders 1	1	1	3	3	4	4
Vegetable: 1	1	1	2	2	4	4
Orchards 1	1	1	3	3	4	4

1: Well suited

2: Moderately suited

3 : Poorly suited4 : Not suited

Table E1.2 Land-holding Status by Farm-size in the Study Area

			**		(Unit	: Acres)
District/Agency	Left Ban	k Area	Rigrt Bar	k Area	Tot	al
Peshawar	O	0%	0	0%	0	0%
Charsadda	14,399	71%	8,918	98%	23,317	80%
Malakand	2,434	12%	0	0%	2,434	8%
Mohmand	3,447	17%	182	2%	3,629	12%
	20,280	100%	9,100	100%	29,380	100%

(Unit: Acres)

Farm-size	Pesha	war .	Chars	adda	Mala	kand	Moh	mad	Number	Gross
	Number	Area	Number	Area	Number	Area	Number	Area		(Acres)
Private Farm Total	-	_	5,016	24,648	8,095	27,932	2,019	16,202	5,903	29,380
under 1.0 acre	-		121	101	341	166	71	41	160	119
1.0 to 2.5		•	696	959	3,318	5,104	309	472	1,017	1,457
2.5 to 5.0			2,453	8,478	2,551	8,430	390	1.249	2,630	9,035
5.0 to 7.5	_	_	646	3,724	1,038	5,401	434	2,421	799	4,536
7.5 to 12.5		: :- <u>-</u> :,	767	6,258	636	5,477	448	3,986	881	7,290
12.5 to 25.0			293	4,895	194	2,591	278	4,142	356	5,784
25.0 to 50.0	_		40	232	6	112	68	1,906	54	656
50.0 to 150.0	_		0	0	11	651	19	998	5	280
150.0 above			0	0	0	0	2	987	1	221
Areal percentage of										
Study area in total		ary u		94.6%		8.7%	eller beginning	22.4%		
area of concerned										
district Study area	0	. 0	4,746	23,317	705	2,434	452	3,629	5,903	29,380

Data source: modified data for non-irrigated area in Agricultural Census 1990

Table E1.3 Present Cropping Pattern in the Study Area Considering District-wise Cropping Patterns

(Unit:Acres)

District/Agency	Left Bank A	Arca	Right Bank	Area	Total	
Peshawar	0	0%	0	0%	0	0%
Charsadda	14,399	71%	8,918	98%	23,317	80%
Malakand	2,434	12%	0	0%	2,434	8%
Mohmand	3,447	17%	182	2%	3,629	12%
	20,280	100%	9,100	100%	29,380	100%

Crops	Peshawar	Charsadda	Malakand	Mohmand	Gross (%)	Gross (Acres)
Maize	0.82%	1.98%	0.34%	0.57%		491
Rice	0.00%	0.01%	0.00%	0.00%	0.01%	2
Kharif-veg.	0.00%	0.00%	0.00%	0.00%	0.00%	0
Kfarif-Fruits	0.00%	0.00%	0.00%	0.00%	0.00%	0
Kharif-fodder	0.33%	0.06%	0.24%	0.01%	0.07%	21
Sugarcane	0.56%	6.01%	0.00%	0.00%	4.78%	1,405
Wheat	26.57%	47.94%	58.65%	65.85%	51.02%	14,990
Barley	1.31%	3.27%	12.44%	4.12%	4.12%	1,212
Oil-seed	0.04%	0.13%	9.53%	1.37%	1.05%	309
Garlic	0.01%	0.01%	0.00%	0.00%	0.01%	2
Rabi-veg.	0.00%	0.00%	0.00%	0.00%	0.00%	0
Potato	0.00%	0.00%	0.00%	0.00%	0.00%	0
Onion	0.00%	0.02%	0.01%	0.00%	0.01%	4
Rabi-fruits	0.00%	0.00%	0.00%	0.00%	0.00%	0
Rabi-fodder	0.35%	0.57%	0.12%	0.01%	0.46%	136
Tobacco	0.00%	0.63%	0.09%	0.00%	0.51%	150
Cropping Int.	30.00%	60.62%	81.41%	71.94%	63.72%	18,721
Command area	0	21,757	2,434	5,190	29,380	
	0%	80%	8%	12%	100%	

Table E1.4 Agricultural Status of District Concerned (Peshawar District)

				Lin-cultivated		Non-imigator					:	
-	Reported Area. (Reported Area, Cultivated Area, Cropped Area	Cropped Area	Ves	Inigated Area	Acra		10 10 10 10 10				1
1	117,402	t			1	20,361	٠.		٠	:	-	
	117,402	20,098	77,262	47,304	49,770					•		٠.
_	•				- "	1				;		
1994/95	126,659		72,198	2.5								
	126,659		78,803		,			: ::				
	126,659	70,100	79,146	56,559	54.995	15,105						
П	122.956		77,093	i	l					72		

	Maize	Rice	Wharif-veg.	Manit-Fruits	Nharif-veg Klarif-Fruits Kharif-fodder Sugarame	Sugercane	Wheat	Barley	Oil-seed	Carlic	Rabi-veg	Potato	Onion	Rabi-fruits	Rabi-fodder Tobacco	Торассо	Total
1991/92																	t
1992/93	25,559	1,031	7.891	14,675	122,400	780,840	50,266	1,309	8	4,612	17,295	576	2,307	2,837		0	1,212,390
1993/94		654	7,218	14,756	7,218 14,756 122,549 814,633	814,633	54,631	1,105	47	4,375	17,691	1,377	330	2,907	180,971		1,247,757
1994/95				- 1 - 1 - 1				•		•	•	•		•			,
	19,691		7,282	14,885	122,649	610 7,282 14,885 122,649 751,252	60,613	2,479	35	6,574	17,880	349	510	2,948	181,284	0	1,189,041
1996/97	20,698		7,325	14,912	122,732	725,322	52,915	2,558	ដ	5,249	17,998	978	383		181,467	Ö	1,156,034
	22,615	92	7,429	14,807	122,583	768,012	54,606	1.863	31	5,203	17,716	820	883		181,121	0	1,201,306
Av.Area	13,753	335	693	707	5,632	15,134	24,479	1,210	56	415	1,140	65	88		6,165	0	70,135
Yield(kg)	1,644	2,087	2,087 11,205	20,951	20,951 21,764 50,7	50.747	2.231	1.539	557	12,529	15,540	12,664	10,232		29,380	. •	

Crop-wis	crop-wise Production;																	(ID 10n)
1 1 1	Maize	Rice	Marifweg	Kanit-Fn	uits Kharit	fodder St	Rice Rhanfweg Künft-Fruits Rhanfsfodder Sugercane Wheat	Wheat	Barley	Oil-seed	Oil-seed Garlic Rabi-veg Potato	Rabi-veg	Potato	Onion		Rabi-fruits Rabi-fodder Tobucco	Tobacco	Total
1991/92								 -		.							'	<u>'</u>
1992/93	8	•	· · · · · · · · · · · · · · · · · · ·	0	0	615	5,775	6,852	201	∞	0	0			0	õ	~	14,449
1993/94	\$	<u> </u>	•	0	•	616	4,165	2,997	121	m	9	0	_		0	606 0	~	8,901
1994/95		•	•	•			•		•	•	•	•	•	•	•	•		•
1995/96	271	٠	•		0	919	2,905	4,402	4.	4	0	0	- -	_	0	0 91		9,15(
1996/97	157			0	0	617	805	5,518	277	0	4					0 912		8,330
	151			0	0	616	3,413	4,942	160	4	13				0	0 910		10,20
Av.Area	145			0	0	57	86	4,657	230	8	1	0	_		0	0 62	~	5,257
Yield (kg)	1,042	•	. •		Ħ	10,807 35	35,000	1,061	969	484	10,000	•	•	•		14,677		· ·

Table E1.5 Agricultural Productions of District Concerned (Charsadda District)

1	Non-imgated Area	9,975	9.950	•	10,049	9,593	9,593	9,832
	Imigated Area	63,362	63,387		63,384	63,840	63,840	63,563
	Un-cultivated Area	25,309	25,309	•	25,213	25,213	25,213	25,251
	Cropped Area	92,756	88,205		285,28	88,611	101,518	93,334
	Cultivated	73,337	73,337		73,433	73,433	73,433	i
	Reported Area	98,646	98,646		98,646	98,646	98,646	98,646
		1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	

	Maize Rice Kharifveg Kfarif-Fruits Kharif-fodder Sugercane	Rice	Kharif-veg.	Ktarif-Pruits A	Charif-fodder	Sugercane	Wheat	Barley	Oil-seed	Owlic	Rabi-veg.	Potato	Onion	Rabi-fruits	Rabi-fodder	Tobacco	Total
1991/92		,		,				١,						,			
	29,710 289	289		14,061	11,313 1,	.280,073	57,686	797	છ	1,112	12,858	936	635	2,403	179,980	14,409	
1993/94	34,206	257		5,963 14,163 11,447 1,300,718	11,4471	.300,718	925'99	578	88	1,649	13,437	2,400	612	2,413	180,239	15,592	1,650,336
1994/95		•				•	•	•	: : : :	•	•	•		•			
1995/96	27,877	361	6,025	14,267	11,511 1	,457,505		435	23	2,812	13,609	8	288			10,279	
1996/97	32,427	174	6,065	6,065 14,328 11,565 1,600,619	11,5651	,600,619	58,086	343	82	2,224	13,660	6,885	287	2,489	181,058	12,565	
	31,055	270	5,996	14,205	11,4591	,409,729		538	53	1,949	13,391	2,781	456			13,211	
Av. Area	17,343	108	570	1,294	009	27,241		326	88	156	853	215	48			6,521	
Yield AS3(k) 1,791 2,501 10,520	1,791	2,501	10,520	10,975	19,090 51,	51,750		1,652	912	12,495	15,708	12,921	685.6			2,026	

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	מיים אינים אינים מיים מיים מיים מיים מיים מיים מיים																(
	Maize	ice Khar	ifveg K	Carif-Fruits	Rice Kharieveg Kharie-Fruits Marif-fodder Sugerenne		Wheat	Barley Oil-seed	Oil-seed	Oarlic	Rabi-veg Potato	Potato	Onion	Rabi-fruits	Onion Rabi-fruits Rabi-fodder	Tobacco	Total
1991/92			 												 - 		,
1992/93	283	2	0	0	57	14,897	8,189	٠,	0		0	0	0	0	904	72	24,539
1993/94	291	0	0	0	58	16.705	5,347	346	0	12	0	0	0	0	906	78	23,743
1994/95					•				. :		•	•	•		•		•
1995/96	126	-	0	0	85 ()	15,558	6,658		16	12	Ö	0	0	0	806	52	23,890
1996/97	220	0	0	0	58	58 19,835		402	73	유 -	0		31	0	910	63	25,973
	230	1	Ö	0	58	16,749	1	346	5	δ	0	0	တ	0	907	99	24,536
Av.Area	196	1	0	0	9 (584	4,795	365	12	F	0	0	1	0	25	99	6,078
Yield (kg/ha	1,175	1,500	•	•	9,625 28,	28,704	1.	947	474	11,333		•	6,200		16,491	1.011	
													Data Se	ource: Agri	cultural Sta	tistics, Al	Data Source: Agricultural Statistics, A.D. of NWFP
											-						

Table E1.6 Agricultural Productions of District Concerned (Malakand District)

							٠.,			
•	:			: :				- 3 -	- 5	Potato
	- 1							٠.		g,
	- :	. :	•						\$100	
: '		1.				٠.				Rabi-veg.
	- 1							٠.,		2
			1							Sarlic
		÷	-			Α,	, i			S
			4			g. :	i			
		. ·		· *.						ğ
					j.	· ' ·		٠.		Oil-seed
	<u> </u>		· :	<u>.</u>	-1			-1		
(in ha)	Non-impated Area	11,304	11,304	1	252	11,252	11,973	11,417		Barley
Ē	P. inj	녍	Ħ	1,	ij	Ţ,	11,	디	:	Ř
				. :			Ž.			•
	migated Area	34,376	376	e i	523	34,429	208	34,264	- 4	Ħ
	ated /	2	4	•	ž	ž	5	3		Wheat
		ľ.,								عن
	Un-cultivated	6,454	8		8	6,453	8	S	11.	· 8
	evitio fres	4.	4,	•	6.4	6,4	4,	6,453		9
	ر ا						ď			Sug
	g.	ဗ္က	7		55	റ്റ	3		200	Kharifweg, Klarif-Fruits Kharif-fodder Sugereme
	\$	57,230	7,		8,1	58,820	Š	57,911		ş
	ddor:	S.	S		Ś	S	S	[v]	1	Pari
	Reported Area Cultivated Area Cropped Area	l o	Q.	- 4		 	ं च			2
•	₹ 2	45,680	8		89.	45,681	80,	45,631		Ä
	, <u>5</u>	4	4	·	4	4	4	4		farif
	S		₩	. ;	**	_	•			×
	3.54	胃	52,134	Ċ	13	52,134	Ę.	52,134		, vcg
ö	oorte	52	52	٠	52	\$2	\$2	3		harit
ıati	\S	<u> </u>		:		٠.				. X
Areal Situation:	÷.	12	8	46	35	96	16			Rice
ea.		1991/92	1992/93	1993/94	1994/95	96/5661	26/9661		Tyr.	Ric
Ş	L	匫	<u>8</u>	2	2	<u>Š</u>	2	$oxed{igs}$	ਂ ਦ	
				, E		5		14	ö	0
1						Ž.			se Production	Maize
		. ,						1	Pro	
								4	ပ္က	-

ob-wise	Crop-wise rroduction.																(111
	Maize Rice	Rice	Khanfweg	Kharif-veg, Klarif-Fruits Kharif-fodder Sugercane	Charif-fodder	Sugercane	Wheat	Barley	Oil-seed	Carlic	Rabi-veg.	Potato	Onion	Rabi-fruits F	Rabi-fodder	Tobacco	Total
1991/92		1		•			•	•		1	•		ŧ			•	
992/93	9.642	12,508	6,778	4,790	70,045	188,118	21,864	13	S	33	11,123	564	3,891	3,874	42,417	1,096	377,026
993/94	1993/94 10,007 12,767 6,359 4,797 69,805 187,934	12,767	6328	4,797	69,805	187,934	22,303	18	S3	238	11,142	661	3,965	3,882	42,453	2,995	379,379
994/95		· · · · · · · · · · · · · · · · · · ·				•		•	•	•	•	•			•	•	•
96/566	10,576	13.138	6,425	4,807	69,828	189,794	22,758	13	48	243	11,299	708	4,016	3,930	42,580	2,156	382,319
26/966	1996/97 10,607 13,135 6,409 4.808 69,852 190,881	13,135	6,409	4.808	69,852	190,881	20,475	П	45	239	11,283	718	3,936	3,850	42,624	2.519	381,392
	10,208	12,887	6,493	4,801	4,801 69,883 189,182	189,182	21,850	15	52	239	11,212	.693	3,952	3,884	42,519	2,192	380,029
W.Area	5,469	6,888	437	416	2,648	4,907	9,577	15	88	40	1,085	48	232	547	1,408	953	34,769
Geld (kg)	Yield (kg) 1,866 1,871 14,849 11,533 26,396	1,871	14,849	11,533	26,396	38,551	2,282	1.017	236	5.925	10,336	13,736	17,016	7,097	30,198	2,299	

, .	Maize	Rice	Khanf-veg	, Kanf-Fru	Rice Kharif-veg Kfarif-Fruits Kharif-fodder Sugercane	er Sugercane	Wheat	Barley	Oil-seed	Carlic	Rabi-veg.	Potato	Onon	Rabi-fruits	Rabi-fruits Rabi-fodder	Tobacco	Total
1991/92					•							•	,	•			
1992/93	8	J	_	0	0 352	2 0	6,575	1,257	618	0	S	0	0	0	213	9	9,042
1993/94	27	J		0	0 351	1	5,263	1,016	216	0	ن	0	0	0	213	IS	7,394
1994/95			•	•			•	•	•	•	•	•		•	•	,	•
1995/96	16	3		0	0 351	1	5,212	848	450	0	J	0	0	0	214	11	7,102
26/966	17	J		0	0 351	1 0	4 967	808	425	0	J	0 (S	0	214	13	6,801
	19			0	0 351	1 0	5.504	983	202	0		0	-	0	214	F	7,585
Av.Area	38			0	0 2	7 0	969'9	1,420	1,089	0		0	-	0	14	10	9,295
Yield (kg)	484				13,009	6	822	692	461	•	•		1,000	•	15,250	1,154	
													Data S	Data Source: Agricul		tural Statistics, A.D. of NWFP	S. of NWFP

Table E1.7 Agricultural Productions of District Concerned (Mohmand District)

			•	٠.				(in Ton)		79,358	81,134	83,032	85,148	82,168	9,295	1	(in Ton)	 	5,463	5,464	5.568	4,725	5,305	5,523		WIT D
-		•						(in	Total	7.	6 0	· 86	8	8			(in	Total			•	-		:		Data Comos. Agricultural Statistics A D of NWED
									Tobacco	0	0		0	0	0			Tobacco	0	0	•	0	0	0	•	· ·
					. ·					1,085	.,217	1,249	1,527	.270	79.	7/1			s	9	9	*	9	1	6,250	
		:							Rabi-fodder							1		Rabi-fe	0	0		0	0	0	0	1
					. •	. '			Rabi-fruits	. 625	641	. 84	885	700	787	Ď,		Rabi-fruits Rabi-fodder	•		, .			÷	•	A
									Onion	5,750	5,870	6,125	6,260	6,001	470	60/5		Onion	0	0	0	0	0	0	,	֡֝֝֜֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓
	٠.										1,056		1,207		:		in.		.0	0	0	0	0	0		
) (2)	:		 N N			Porato		e in the second				100			Potato	1						1	
					·. ·	٠.			Rabi-veg.	75	748	754	814	770	112	1,000		Rabi-veg.	0	0		0	0	0		
							•		:	<u> </u>	5	8	120	103	21			Garlic]	0	0	0	0	0	0		
٠.	٠.			- :			٠		1 Carlic	∞	0	ı. II	395	106	28				52	23	56	4	51	15	446	
									Oil-seed			•	č	ī	4	3		Oil-seed								
(in ha)	Non-imigated Area	6,557		6,944	9,050	3,7	7,689		Barley	0	71	74	81	57	64 5			Barley	300	287	358	3	311	339	919	
		6.850 6.870		6,995	7,496	, CC,	7,154		7	906,3	6,425	965'9	6,553	6,454	3,828	200		Wheat	5,050	5,060	5.072	4,290	4,868	6,019	808	
	d Impated Area	213 6 120 6	٠			١			• Wheat						243 3	1			0		0		0) ()		
	Un-cultivated Area	216,21 216,12			213,07		214,777		Sugercan	58,83	59,500	60,340	609	59,91	71 7	0,7		Sugercane	•	fil. Fil						
	Croped Area	15,368 15,733		16,308	16,251	7//07	16,086		Klarif-Fruits Kharif-fodder Sugercane	274	378	. 641	651	486	49	404.4		nf-fodder	- 1	2	, ,	()	7	1	4,500	
	Area Cro	13,407 13,500		30		1	14,843		ruits Kha	708	892	965	,037	901	908 0	260		Kfanf-Fruits Khanf-fodder	0	0	0	O	0	0		
	Cultivated		: :	, j	1.2	•	- [i i		Ś		1	2					0	0		0	Ö	0		
ion;	Reported Area Cultivated Area	229,620	•	229,620	229,620	070,677	229.62(Kharif-veg	576	999	828	908	745	109	0.0		Khanf-veg.			•				•	
Areal Situation;	ož.	1991/92 1992/93	1993/94	1994/95	7 -	1990/97			Rice	0	0	. "	m	7	, 4 Q	000		Rice	0	0	. 0	0	0	0		
\Z :		<u> </u>	199.	199	199	<u> </u>		tion;		3,532	3,570	3,690	3,726	3,630	2,030	8	tion;		55	26	73	80	99	64 5	354	
								Produc	Maize	3,5	Ε. Σ	. <u>ჯ</u>	R	3,6			Produc	Maize			• .	 <u>} </u>	_		-i	
								Crop-wise Production;		1991/92	1993/94	1995/96	. 46/9661		Av.Area	Jeig (Kr	Crop-wise Production;		1991/92	1993/94	1994/95	1996/97		Av.Area	Yield (kg)	

Table E1.8 Land Breakdown of the Study Area

Left Bank Area

ist.) Total Canal Wells Total Barani S88.2 481.3 406.9 2,822.6 2,822.6 1,400.8 1,400.8 0.0 850.8 850.8 1,05.9 22.0 83.9 1,817.3 1,797.0 angi 2,418.4 2,174.4 2,44.0 3,939.6 3,901.0 29.6 0.0 29.6 208.4 205.0 angala 1,573.0 0.0 29.6 208.4 205.0 angala 1,573.0 0.0 48.0 211.8 198.3 48.0 0.0 92.6 753.4 753.4 angi 1,40.5 113.5 27.0 723.6 721.8 and 1,40.5 113.5 27.0 723.6 721.8														
11.) Total Canal Wells Total Barani 888.2 481.3 406.9 2,822.6 2,822.6 1,400.8 1,400.8 1,400.8 22.0 83.9 1,817.3 1,797.0 29.6 0.0 29.6 208.4 205.0 29.6 0.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 29.6 208.4 205.0 20.6 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 205.0 208.4 20	lame of Mouzas	<u>П</u>	igated Area		Cun	irrigated Are:	- 1	Dagoba Cultivated	Cultivated	Š	Un-cultivated Area	ea	Total	Remarks
888.2 481.3 406.9 2,822.6 2,8 1,400.8 1,400.8 0.0 850.8 850.8 1,400.8 22.0 83.9 1,817.3 1,7 1,05.9 2,418.4 2,174.4 2,44.0 3,930.6 3,5 20.6 20.6 20.6 20.6 20.6 20.6 20.6 20.6	Teh/Dist.)	Total	Canai		Total	Barani	Sailaba		Area	Total	Waste Area N	Non-cultivable	Area	
ngi 2.418.4 2.174.4 244.0 3.939.6 3.5 29.6 29.6 29.6 29.6 208.4 243.0 29.6 208.4 243.0 29.6 208.4 243.0 29.6 208.4 243.0 20.0 211.8 243.0 22.6 225.6 225.6 226.0 22.6 226.0 22.6 22.6 22.6 22.6	obandi	888.2	481.3		2,822.6	2,822.6	0.0	0.0	3,710.8	2,631.9	512.8	2,119.1	6,342.7 LSC	ISC
ngi 2,418.4 2,174.4 244.0 3,939.6 3,5 29.6 208.4 29.6 20.0 29.6 208.4 29.6 208.4 248.0 29.6 208.4 248.0 25.6 208.4 248.0 25.6 208.4 248.0 25.6 25.6 25.6 25.6 25.6 25.6 25.6 25.6	hakoor	1,400.8	1,400.8	0.0	820.8		0.0	0.0	2,251.5	413.0	168.8	244.3	2,664.5 LSC	LSC
ngi 2,418.4 2,174.4 244.0 3,939.6 3,5 29.6 0.0 29.6 208.4 2418.0 1,573.0 0.0 211.8 Dehri 92.6 0.0 92.6 753.4 i 140.5 113.5 27.0 723.6 o76.0 894.9 81.1 1248.8	tehram	105.9	22.0	83.9	1,817.3	1,797.0	20.3	19.5	1,942.7	1,189.8	1.6	1,188.1	3,132,4	
29.6 208.4 Bala 1,573.0 1,573.0 0.0 211.8 Dehri 92.6 0.0 92.6 753.4 if 140.5 113.5 27.0 723.6 976.0 894.9 81.1 1248.8	Aera Tangi	2,418.4	2,174.4	244 0	3,939.6	3,901.0	38.6	0.0	6,358.0	1,165.9	441.0	724.9	7,523.9	7,523.9 Tangi Lift Canal
Bala 1,573.0 1,573.0 0.0 211.8 1)lia	29.6		29.6	208.4	205.0	4.6	0.0	238.0	1,089.0	16.9	1,072.1	1,327.0	
Dehri 92.6 0.0 48.0 225.6 1	randera Bala	1,573.0	1,573.0	0.0	211.8	198.3	13.5	0.0	1,784.8	199.8	41.0	158.8	1,984.5 USC	usc
Dehri 92.6 0.0 92.6 753.4 140.5 113.5 27.0 723.6 976.0 894.9 81.1 1248.8	Sghar	48.0	٠.	48.0	225.6	189.4	36.3	0.0	273.6	56.1	1.4	54.8	329.8	
140.5 113.5 27.0 723.6 976.0 894.9 81.1 1.248.8	Jarazai Dehri	92.6		92.6	753.4	1	0.0	1.9	847.9	177.9	116.4	61.5	1,025.8	
076.0 894.9 81.1 1.248.8	Justatzai	140.5		27.0	723.6	721.8	1.9	0.0	864.1	526.3	265.3	261.0	1,390.4	
	Abazai	976.0	894.9	81.1	1,248.8	2.4	1,246.4	0:0	2,224.8	2,163.8	568.8	1,595.0	4,388.5	4,388.5 Tangi Lift Canal
Total 7,673.0 6,659.8 1,013.2 12,801.8 11,441.5	[otal	7,673.0	6,659.8	1,013.2	12,801.8	11,441.5	1,360.3	21.4	20,496.2	9,613.3	2,133.8	7,479.5	30,109.5	

: Above mouzas are in Tangi tehsil.

Kight Bank Area	g e												(Unit in Acres)
Name of Mouzas	T.T.	Irrigated Area		Un-1	rrigated Area	g	Dagoba	Cultivated	5	Un-cultivated Area	rea	Total	Remarks
	Total	Canal	Wells	Total	Barani	Sailaba		Area	Total	Waste Area	Waste Area Non-cultivable	Area	
Kathzai Bala	548.0	548.0	0.0	25.0	25.0	0.0	0.0	573.0	2,198.0	1,417.0	781.0	:	2,771.0 Ichri Br.
Sadar Garhi	193.0	164.0	29.0	51.0	33.0	18.0	1.0	245.0	84.0	26.0	58.0		329.0 Doaba Br.
Mata Hamza Khel	525.0	497.0	28.0	451.0	451.0	0.0	1.0	977.0	621.0	275.0	346.0		1,598.0 Ichri Br.
Mata Palangzai	479.0	468.0	11.0	100.0	100.0	0.0	0.0	579.0	850.0	239.0	311.0		1,429.0 Ichri Br.
Mata Rustam Khel	1,734.0	1,726.0	8.0	329.0	329.0	0.0	0:0	2,063.0	1,569.0	816.0	753.0		3,632.0 Ichri Br.
Pangpao	1,596.0	1,596.0	0.0	594.0	589.0	5.0	0.0	2,190.0	1,495.0	461.0	1,034.0		3,685.0 Michnai Br.
Daman Shabqadar	974.0	974.0	0.0	419.0	419.0	0.0	0.0	1,393.0	2,595.0	1,072.0	1,523.0		3,988.0 Michnai Br.
Dilazak	764.0	764.0	0.0	79.0	3.0	76.0	0.0	843.0	275.0	25.0	250.0	•	1,118.0 Michnai Br.
Total	6.813.0	68130 67370	0 92	2.048.0	1 049 0	000	00	0 598 8	0 687 0	4.631.0	0 450 S	125500	-

Table E1.9 Agricultural Status at Left Bank of Study Area

	יים איז	*			l								I										(~
Year	Mouzas	Cultivated		U	ropped	Cropped Area in Kharif	Charif			•				ç	Cropped Area in Rab	in Rabi						Total Cropped	Cropping
		Area	Total	Maize S	Solgum	Sugar-	Tomato	S III	Vege- tables	Total	Wheat	Barley I	Fodder To	Tomato C	Garlic St	Sugar- Tol	Tobacco O	Onion Po	Potato Mu	Rape & O	Orchard	Area	Intensity
	Dobandi	2,822.6	00	0.0	00	0.0	0.0	ဝ	0.0	0.868,1	1,618.0	2330	47.0	00	0.0	0.0	8	0.0	0.0	0.0	0.0	1,898.0	67.2%
	Shakoor	850.5	0.0	0.0	00	000	0.0	0.0	0.0	481.0	470.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0; 2;	0.0	4810	26.6%
	Behram Dhen	1,817.3	0.0	0.0	00	0.0	0.0	00	0.0	305.0	301.0	4.0	0:0	0.0	0,0	0.0	0.0	0.0	0.0	0.0	0.0	305.0	16.8%
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Mera Tangi	3,939.6	0.0	0.0	00	0.0	0.0	0.0	0:0	3,111.0	3,111.0	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	3,111.0	79.0%
	Oila	208.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	170.0	1120	58.0	00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	170.0	81.6%
1994/95	Gandera Bala	211.8	00	0.0	00	0.0	0.0	0.0	00	186.0	171.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,0	00	186.0	87.8%
	Asghar	22.6	0.0	0.0	0.0	0.0	0.0	0.0	00	164.0	117.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	164.0	72.7%
	Barazai	753.4	0.0	0.0	00	0.0	0.0	0.0	0.0	613.0	516.0	92.0	0.0	0.0	0:0	0:0	0.0	0.0	0.0	5.0	0.0	613.0	81.4%
	Nusraca	723.6	00	0.0	00	0.0	0.0	000	0.0	672.0	652.0	20.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	672.0	92.9%
	Abazai	•	•	•	•	•	•	•	-	•	•	•	•	•	•		•	•		•	•	•	•
	Subtotal	11.552.8	0.0	0.0	0'0	0.0	0.0	0.0	0'0	7,600.0	7,068.0	475.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0,0	7,600.0	65.8%
	Dobandi	2,822.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,924.0	1,614.0	270.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,924.0	68.2%
	Shakoor	850.5	0.0	0.0	00	0.0	0.0	0.0	0	463.0	461.0	2.0	0.0	0.0	0.0	0.0	0.0	0'0	0.0	0.0	00	463.0	54.4%
	Behram Dheri	1,817.3	00	0.0	00	00	0.0	0.0	0	294.0	275.0	0.0	. 0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	294.0	16.2%
	Mera Tangi	3,939.6	00	0.0	0.0	0.0	0.0	0.0	0	3,178.0	3,178.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,178.0	80.7%
	Qila	208.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	166.0	110.0	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	166.0	79.7%
1995/96	Gandera Bala	211.8	000	0.0	0.0	0.0	0.0	0.0	0.0	183.0	168.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	183.0	86.4%
	Asgbar	225.6	0.0	0.0	ွ	0.0	0.0	0.0	00	157.0	113.0	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	157.0	29.69
	Barazai	753.4	0.0	0.0	0	٠.	0.0	0.0	0.0	286.0	208.0	76.0	0.0	0:0	00	0.0	0.0	0.0	0.0	20	0.0	586.0	77.8%
	Nusratzai	723.6	0:0	0.0	00	0.0	00	0.0	00	635.0	0.029	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	635.0	87.8%
	Abazai			•					-		•		•	٠,	٠	•	•	٠	•	,	-		
	Subtotal	11,552.8	00	00		8	8	8	8	7,586.0	7.047.0	486.0	40.0	10.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	7,586.0	65.7%
	Dobandi	2,822.6	0.0	0.0	00	0.0	0.0	0.0	0	943.0	807.0	136.0	0.0	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	943.0	33.4%
	Shakoor	850.5	00	0.0	8	0.0	0.0	0.0	00	406.0	403.0	3.0	0.0	0.0	0.0	0.0	0:0	0:0	0.0	0.0	0.0	406.0	47.7%
	Behram Dheri	1,817.3	0.0	8	8	0.0	0.0	00	0	304.0	297.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0'0	304.0	16.7%
	Mera Tangi	3,939.6	00	00	0	0.0	0.0	0.0	0	3,155.0	3,155.0	00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,155.0	80.1%
	ello.	208.4	0.	0.0	0	9	0.0	0.0	ွ	174.0	114.0	0.00	0.0	0.0	0.0	0'0	0.0	0.0	0.0	0,0	0.0	174.0	83.5%
1996/97	Gandera Bala	211.8	0.0	00	0	0.0	0'0	00	00	180.0	1720	8.0	0.0	0.0	80	0.0	0'0	0.0	0.0	0.0	0.0	0'081	85.0%
	Asghar	•	•	•	•			•	•	•	•	•	•	•			•	•		•		•	•
	Barazai	753.4	0.0	0.0	9	0.0	0.0	0	0,0	614.0	517.0	91.0	0.0	0.0	00	0.0	0.0	0.0	0.0	0.0	0,0	614,0	81.5%
	Nusmiza		•	•	•	"	•	•	•	•	•	•	•	•	•	•	•	•			•		·
	Abazai	1,248.8	0'0	0.0	0	1	0.0	8		373.0	373.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	. 0.0	0.0	0.0	373.0	29.9%
	Subtotal	11,852.4	0.0	0.0	8		0.0	0.0		6.149.0	5,838.0	305.0	00	0,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6,149.0	51.9%
Average (Average (1995-1997)	11,652.7	000	0.0	၀	- 1	0.0	S	8	7,111.7	6,651.0	422.0	29.0	33	8	0.0	0.0	20	0.0	4.3	0.0	7,111.7	61.0%
			0.0%	0.0%	000	0.0%	%0.0	0.0%	0.0%		57.1%	3.6%	0.2%	%0.0	0.0%	0.0%	0.0%	0.0%	20.0	0.0%	0.0%	61.0%	

Table E1.10 Agricultural Status at Right Bank of Study Area

or Nor	For Non-imigated Area:		,																٠			(Cnri	(Unit in Acres)
Year	Mouzas	Cultivated			Cropped	Cropped Area in Khanif	Khanf		-					Sp	ped Are	Cropped Area in Rabi					Pi —	Total Cropped	Cropping
		Area	Total	Maize	Maize Solgum	Sugar-	Tomato Chilli	1 3.	Vege-	Total	Wheat	Barley Fodder Tomato	oder To	mato G	Sarlic Su	Sugar- Tal	Tabacco On	Onion Potato	Rape &	1	Orchard	Area	Intensity
	Damam Shab Cadar	418.8	0.0	0.0	0.0	0.0	000	0.0	0.0	57.0	40.0	5.0	0.0	0:0	0:0	20	0.0	10.0	0,0	0.0	0.0	57.0	13.6%
	Panj Pao	593.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00	•	•		•	•	•	•	•	•		•	•	•
	Mata Rustan Khei	328.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	328.6	328.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00	328.6	*
	Mata Plang Zai	8.8	0.0	0:0	0.0	0.0	0.0	0.0	0.0	8.0	8.0	0.0	0.0	0.0	0: 0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	8.0%
	Mata Hamza Khel	451.2	00	0.0	0.0	0.0	0.0	0.0	0	0.99	98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.99	14.6%
1994/95	Shadar Gari	51.6	7. 7.	0.0	0.0	12.0	0.0	0.0	0.0	18.0	0.6	2.0	0.0	0.0	00	0.0	0.0	0.0	0.0	4.0	0.0	30.0	58.1%
•	Katozai Bala	24.6	0.0	0.0	99	0.0	0.0	0.0	0.0	0.0	•	•	•	•	•		•	•			•		t
	Dala Zak	79.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	•	•	•	•		•	•	•	:		•	1	
	Subtotal	2,047.4	12.0	8	8	12.0	0.0	8	0.0	477.6	451.6	10.0	0.0	0.0	0.0	2.0	0.0	10.0	0.0	4.0	0.0	489.6	23.9%
	Damam Shab Cadar	418.8	13.0	13.0	0.0	0.0	00	00	0.0	197.0	197.0	0.0	0.0	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	210.0	50.1%
	Pani Pao	593.7	0.0	00	0.0	0.0	0.0	0.0	0.0	0.0	١	•	•	•	•	•	•	•	•			•	•
	Mata Rustan Khel	328.6	8	0.0	0.0	00	0.0	0.0	0.0	328.6	\$28.6	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	328.6	••
1995/96	1995/96 Mata Plang Zai	8.66	0:0	0.0	8	0.0	0.0	000	0.0	8.66	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.00	•
د. د	Mata Hamza Khel	451.2	0.0	0.0	0.0	000	0.0	0.0	0.0	74.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	16.4%
	Shadar Gani	51.6	0.0	0.0	0.0	00	0.0	0.0	0.0	19.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	0.0	19.0	36.8%
	Katozai Bala	24.6	0.0	0:0	0.0	0.0	0.0	0.0	0.0	2.6	24.6	0.0	0:0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	24.6	•
	Dala Zak	79.3	0.0	0.0	0.0	00	0.0	00	0.0	79.3	79.3	0.0	00	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0.0	79.3	•,
	Subtotal	2,047.4	13.0	13.0	0.0	00	00	00	0.0	822.2	814.2	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	835.2	40.8%
	Damam Shab Cadar	418.8	2	2.0	0.0	0	0.0	0.0	0.0	102.0	102.0	0.0	0.0	0.0	0.0	0.0	0.0	0'0	0.0	0.0	0.0	104.0	24.8%
Par Par Par	Panj Pao	593.7	0.0	0.0	0.0	00	0.0	0.0	0.0		:		•	•		·	•	•	•	•		•	•
	Mata Rustan Khel	328.6	2	0.0	00	0.0	0.0	9	0.0	388.6	328.6	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	388.6	•
1996/97	1996/97 Mata Plang Zai	8.00	0.0	0.0	0.0	00	0.0	0.0	0.0	•	•	•	•		•		•	•	•	•	•	•	
	Mata Hamza Khel	451.2	9	0.0	0:0	8	0.0	0,0	0.0	•		•		•	•	•	•		•	•	·-	•	•
5. 15. 34.	Shadar Gari	21.6	00	0.0	0.0	0.0	0.0	00	0.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.8%
	Katozai Bala	24.6	0.0	0.0	0.0	3	0.0	0.0	0.0	24.6	24.6	0.0	0.0	00	0.0	0.0	°;	0:0	0.0	0.0	0.0	24.6	•
	Dala Zak	79.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0:0	0.0	%0.0
	Subtotal	2,047.4	2	20	0:0	0.0	0.0	0.0	0.0	518.1	458.1	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1	25.4%
Average (Average (1995-1997)	2,047.4	0.6	5.0	0.0	4.0	0.0	0.0	0.0	0.909	574.6	25.3	0.0	0.0	0.0	0.7	0.0	3.3	0.0	20	0.0	615.0	30.0%
ni Ni			0.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	29.6%	28.1%	1.2%	%0.0	0.0%	0.0%	0.0%	0.0%	0.2% 0.	0.0%	0.1%	0.0%	30.0%	

*: It is not considered due to unreliability of data.

Table E1.11 Present Yields in the Study Area

District/Agency	Lest Bank Area		Right Bank Aı	ea	Total	
Peshawar	0	0%	0	0%	0	0%
Charsadda	14,399	71%	8,918	98%	23,317	80%
Malakand	2,434	12%	0	0%	2,434	8%
Mohmand	3,447	17%	182	2%	3,629	12%
	20,280 10	00%	9,100	100%	29,380	100%

Crops	Peshawar	Charsadda	Malakand	Mohmand	Yield (kgs/ha)	(kgs/Acre)
Maize	1,042	1,175	484	1,354	1,140	461
Rice	•	1,500	-	_	1,500	607
Kharif-veg.	•	- 1	•	<u>-</u>	_	<u> </u>
Kfarif-Fruits		-		<u>.</u>		
Kharif-fodder	10,807	9,625	13,009	4,500	9,272	3,752
Sugercane	35,000	28,704			28,704	11,616
Wheat	1,061	1,284	822	809	1,188	481
Barley	696	947	692	919	923	373
Oil-seed	484	474	461	446	469	190
Garlic	10,000	11,333		<u>-</u>	11,333	4,587
Rabi-veg.		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				<u> </u>
Potato		. 1 7 4 1 <u>2</u> 1				
Onion		6,200	1,000	<u> </u>	5,714	2,312
Rabi-fruits		-				
Rabi-fodder	14,677	16,491	15,250	6,250	15,130	6,123
Tobacco		1,011	1,154	egy the <u>-</u>	1,025	415
Command area	0	23,317	2,434	3,629	29,380	
	0%	80%	8%	12%	100%	

Table E1.12 Latest Whole-sale Prices by Crops in the Study Area

											1- D.J	D- 440 b-
·		1.107	4 07	C 07	0-107	Nov-97	Dec-97	Jan-98	Feb-98	W поте Маг-98	sale Prices Apr.98	May-98
	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	MOV-97	Dec.yr	7411-70	1000	1101 70		1111) 70
CEREAL LINK	400.0		440.0	240.0	360.0	220.0	220.0	320.0	320.0	330.0	330.0	260.0
Wheat	280.0	320.0	320.0	340.0	360.0	320.0	320.0			300.0	300.0	290.0
Barlay	260.0	280.0	280.0	280.0	300.0	300.0	300.0	300.0	300.0			290,0
Maize	320.0	360.0	360.0	360.0	360.0	280.0	280.0	280.0	280.0	290.0	290.0	160.0
Rice Course	300.0	280.0	280.0	280.0	280.0	280.0	280.0	360.0	360.0	360.0	360.0	360.0
Rice Fine	480-640	480-640	480-640	480-640	480-640	640.0	640.0	760.0	760.0	760.0	760.0	760.0
Iowar	700-750	-	•	. •	•		•	7 - 1	• .		•	. •
Bajra		600.0	600.0	600.0	600.0	600.0	600.0	600.0				-
PULSES			4.1	1000		× 4			e e e e e e e e e e e e e e e e e e e			
Mash	1000.0	1000.0	1000.0	1000.0	880.0	800.0	820.0	820.0	820.0	820.0	820.0	820.0
Mong	640.0	640.0	640.0	640.0	720.0	760.0	760.0	760.0	760.0	780.0	780.0	780.0
Masoor	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0
Gram			· _	•			_	<u>.</u>	-	· - ·	. •	
Matter	720.0				3. ·		-	•	•		-	•
Arhar	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	650.0	650.0	650.0
OIL SEED	000.0				·.							
Rape&Mustard	400.0	400.0	500.0	600.0	600.0	-	600.0	600.0	-	· -	-	660.0
•	400.0	400.0	500.0	-				-	_ 1.1		1 - 13	
Taramera		· ·	_		<u>.</u>							•
Collon										•		- · ·
Seasamum		· · · · ·		· :	- 5.							
G/Nut				• •	·		- 1 To 1 4 A					
Linseed		•						as Tenja			ng Kilonari	a al Ta
Cotton Seed		<u> </u>					<u> </u>					
ТОВАССО	* 5		NA Land State									114
Tobacco Virg I	1000.0	-	1760.0	1920.0	1920.0				· - · .	14 · - 1		, ⁻
Tobacco Virg. II	1.5		.	•			•		6, 7 × 1			
Tobacco Virg.III	1	•	2400.0	2400.0	2400.0	: :	4.5					- , .
Sugarcane (to Mill)		•	18 1 to 18 18 18 18 18 18 18 18 18 18 18 18 18	•	•	42.0	42.0	42.0	42.0	42.0		
Sugarcane (to Seed)	1.0			•	•	5.0 Til 1	•	•				•
Sugarbeet	-	<u>√ -</u> ≥	· . •	•		50.0	50.0	50.0	50.0	50.0	55.0	
Gur	480-1000	800.0	1000.0	960.0	800.0	800.0	880-1120 8	800-1120	533-720	480-640	480-640	533-800
VEGETABLE	= 1			4				4-11-	egy filter			
Potato	400.0	400.0	400.0	480.0	400.0	440.0	240.0	200.0	180.0	•	•	120.0
Tomato	120.0	200.0	720.0	640.0	640.0	560.0	600.0	300.0	300.0	•	. •	800.0
Lady Finger	240.0	360.0	320.0	480.0	_		-	-	•	; -	•	480.0
Onion	320.0	400.0	240.0	320.0	320.0	320.0	300.0	300.0	300.0	-	•	•
Gourd	120.0	320.0	400.0	320.0	240.0		-					•
Bitter Gourd	200.0	4	240.0	400.0	_			•	-		44 E	
Tori				160.0	a •		-	•	-	•	- - 11	
Tumip					240.0	120.0	100.0	100.0	80.0	•	<u>.</u>	
Coloculia					240.0	160.0	200.0	280.0	280.0)	11.
Califlower			1 2 3		320.0	240.0	150.0	150.0	140.0			_
Tender							_	1			320.0	280.0
Cucumber	1 4 2 4	_				_	•				330.0	280.0
FRUITS	 					+1 +4.			1 7 2 3		7	1 77
	4000	560.0	800.0			e sylfig						
Peach	480.0	0.000						<u> </u>				# 2 T
Pear		•	240.0	-			W Žas					
Plum	240.0	: - .		•	0000	220.0	400.0	$\mathcal{P}_{i_1}(\overline{I}, \underline{I}, \underline{I})$				
Persimmon					200.0	320.0	400.0		1000			
Nalfavn			•	•		•		140.0	180.0		600.0	
Lougusf			· · · -			`				al Extensio	520.0	

Source: Agricultural Extension Office, Charsadda

Table E1.13 Land Capability Classes of New Command Area

Command area in the Left Bank:

(Unit: acres)

Land Class	Study A	rea	beyond the St	udy Area	Total	
	(GCA)	(CCA)	(GCA)	(CCA)	(GCA)	(CCA)
I	2,135	2,078	2,030	1,974	4,165	4,052
llr	3,428	3,335	0	0	3,428	3,335
llsr	0	0	660	642	660	642
IIIs	2,515	2,454	1,015	988	3,530	3,442
IIIsr	0	0	2,884	2,806	2,884	2,806
IVsr	3,138	2,183	2,978	2,070	6,116	4,253
Misc.areas	0	0	1,750	1,750	1,750	1,750
Total	11,216	10,050	11,317	10,230	22,533	20,280

Command area in the Left Bank:

(Unit: ha)

Land Class	Study Area	beyond the Study Area	Total
	(GCA) (CCA)	(GCA) (CCA)	(GCA) (CCA)
I	864 841	822 799	1,686 1,640
Hr	1,387 1,350	0 0	1,387 1,350
Ilsr	0 0	267 260	267 260
Ills	1,018 993	411 400	1,429 1,393
IIIsr	0 0	1,167 1,136	1,167 1,136
lVsr	1,270 883	1,205 838	2,475 1,721
Misc.areas	0 0	708 708	708 708
Total	4,539 4,066	4,580 4,141	9,119 8,207

The figure of the Command Area includes the area of existing Tangi sheme.

Command area in the Right Bank:

(Unit: acres)

Communa at co	· m mo mgm ~ amm	The state of the s	
Land Class	Study Area	beyond the Study Area	Total
	(GCA) (CCA)	(GCA) (CCA)	(GCA) (CCA)
I	2,064 1,823	2,910 2,568	4,974 4,391
IIr	0 0	0	0 0
IIsr	0 0	0 0	0 0
IIIs	3,341 2,949	0 0	3,341 2,949
IIIsr	314 278	0 0	314 278
lVsr	0 0	0 0	0 0
Misc.areas	0	1,482 1,482	1,482 1,482
Total	5,719 5,050	4,392 4,050	10,111 9,100

Command area in the Right Bank:

(Unit: ha

Land Class	Study Area	beyond the Study Area	Total
	(GCA) (CCA)	(GCA) (CCA)	(GCA) (CCA)
Ī	835 737	1,178 1,040	2,013 1,777
Hr A C	0 0	0	0 0
IIsr	0	0 0	0 0
IIIs	1,352 1,193	0 0	1,352 1,193
Illsr	127 113	0 0	127 113
IVst	0 0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0
Misc.areas	0 0	600 600	600 600
Total	2,314 2,043	1,778 1,640	4,092 3,683

The figure of the Command Area includes the irrigable area of left bank of Subhan Khwar.

Table E2.1 Estimated Reference Evapo-Transpiration (ETo) in the Study Area

Evapo-transpiration Estimated by Ovserved Pan Evaporation (for reference)

Station: Murdan

liems	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Epan (Monthly)	29.3	47.2	125.9	201.3	348.0	499.4	461.4	314.9	214.1	112.1	61.1	27.7	2,442.5
Epan (Daily)	0.95	1.69	4.06	6.71	11.23	16.65	14.88	10.16	7.14	3.62	2.04	0.89	ē.
RHmean (%)	59.5	58.0	60.0	55.5	42.0	39.0	57.5	67.0	61.0	57.0	61.0	64.5	
Wind velosity (Km/day)	62.2	88.9	80.0	88.9	80.0	106.7	128.9	124.4	66.7	40.0	53.3	40.0	<u> </u>
Кр	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
ETo (Daily)	0.66	1.18	2.84	4.70	7.86	11.65	10.42	7.11	5.00	2.53	1.43	0.63	
ETo (Monthly)	20.5	33.1	88.1	140.9	243.6	349.6	323.0	220.4	149.9	78.5	42.8	19.4	1,709.8

[:] Data in Peshawar

Evapo-transpiration Estimated by FAO's Blaney-Criddle Method (for reference)

Station: Peshawar

Quantum: Leonawai					1000								
Items	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	11.2	12.9	17.4	23.2	28.6	33.1	32.2	30.7	28.9	23.7	17.6	12.5	1 11
P	0.23	0.25	0.27	0.29	0.31	0.32	0.32	0.30	0.28	0.25	0.23	0.22	
Px(0.46T+8.13)(=F)	3.05	3.52	4.36	5.45	6.60	7.47	7.34	6.68	6.00	4.76	3.73	3.05	
Monthly Total (F)	94.7	98.4	135.0	163.6	201.6	224.2	227.6	206.9	180.0	147.5	112.0	94.7	1,889.2
					15	100			- 7, 1			- 12	
RHmin	44.0	40.0	42.0	38.0	27.0	26.0	44.0	54.0	46.0	43.0	50.0	52.0	1 1
n	8.0	8.7	9.5	10.6	12.2	12.8	10.4	10.3	10.8	10.3	9.0	7.7	
N	10.1	11.0	11.9	13.1	14.0	14.5	14.3	13.5	12.4	11.3	10.3	9.8	
n/N	0.79	0.79	0.80	0.81	0.87	0.88	0.73	0.76	0.87	0.91	0.87	0.79	<u> </u>
Wind velosity (m/sec)	0.72	1.03	0.93	1.03	0.93	1.23	1.49	1.44	0.77	0.46	0.62	0.46	
ETo (Daily)	1.90	2.45	3.60	5.00	7.30	8.50	7.30	6.35	6.70	4.60	3.10	1.40	10 4 2
ETo (Monthly)	58.9	68.6	111.6	150.0	226.3	255.0	226.3	196.9	201.0	142.6	93.0	43.4	1,773.6

Evapo-transpiration Estimated by Modify PENMAN Method

Station: Peshawar

Station, resnawai													
Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sep.	Oct.	Nov.	Dec.	Total
ta ta	13.28	14.90	19.88	28.44	39.18	50.59	48.14	44.15	39.87	29.29	20.12	14.50	
ed	7.90	8.64	11.93	15.78	16.46	19.73	27.68	29.58	24.32	16.70	12.27	9.35	24/4/5
(ea-ed)	5.38	6.26	7.95	12.66	22.72	30.86	20.46	14.57	15.55	12.59	7.85	5.15	
Wind verosity (Km/day)	62.2	88.9	80.0	88.9	80.0	106.7	128.9	124.4	66.7	40.0	53.3	40.0	
(Wind verosity)	0.44	0.51	0.49	0.51	0.49	0.56	0.62	0.61	0.45	0.38	0.41	0.38	:
(1-W)	0.42	0.40	0.31	0.28	0.22	0.21	0.20	0.21	0.22	0.26	0.33	0.41	10,714
(1-W)f()(ea-ed)	0.99	1.26	1.31	1.77	2.43	3.53	2.47	1.81	1.54	1.26	1.08	0.79	
R ₃	7.90	9.80	12.40	14.80	16.50	17.10	16.80	15.50	13.40	10.80	8.50	7.20	
n	8.0	8.7	9.5	10.6	12.2	12.8	10.4	10.3	10.8	10.3	9.0	7.7	
N	10.1	11.0	11.9	13.1	14.0	14.5	14.3	13.5	12.4	11.3	10.3	9.8	1 - 2 -
n/N	0.79	0.79	0.80	0.81	0.87	0.88	0.73	0.76	0.87	0.91	0.87	0.79	-
(1-a)(0.25+0.5n/N)	0.48	0.48	0.49	0.49	0.51	0.52	0.46	0.47	0.51	0.53	0.52	0.48	11 11
Ra(1-a)(0.25+0.5n/N)	3.82	4.74	6.04	7.27	8.49	8.87	7.73	7.34	6.89	5.72	4.38	3.47	
f(t)	12.94	13.28	14.08	15.24	16.42	17.45	17.25	16.88	16.50	15.83	11.12	13.20	
f(ed)	0.23	0.22	0.20	0.18	0.18	0.16	0.13	0.12	0.14	0.18	0.20	0.22	
f(n/N)	0.81	0.81	0.82	0.83	0.88	0.89	0.75	0.79	0.88	0.92	0.89	0.81	3 . 4
f(t)f(ed)f(n/N)	2.39	2.40	2.33	2.29	2.58	2.53	1.69	1.63	2.08	2.57	2.50	2.32	
W(_)	0.83	1.42	2.45	3.61	4.61	5.03	4.87	4.54	3.75	2.31	1.25	0.69	14 1141
ETo (Daily)	1.82	2.68	3.76	5.39	7.04	8.57	7.33	6.35	5.29	3.57	2.34	1.47	100
ETo (Monthly)	56.4	75.0	116.7	161.6	218.1	257.0	227.3	197.0	158.7	110.7	70.1	45.7	1,694.2



Table E2.2 Crop Water Requirement in Munda Dam Multipurpose Project (1/3)

Month		Od.			Nov.			Dec.			Jan.			Feb.			V21			Apr.			May			June	
10days	l ı	2	3	1	2 .	3	1	2	3_	1	2	3	1	2	3	t	2	3	1_	2	3	1_	2	3	1	2	
		0.4	0.4	0.55	0.85	1.08	1.15	1.15	1.15	1.15	1.08	0.85	0.55	0.25	0.00	0.00	0.00										
	Ì		0.4	0.4	0.55	0.65	1.08	1.15	1.15	1.15	1.15	1.06	0.45	0.55	0.25	0.00	0.00	0.00									
				6.4	0.4	0.55	0.85	1.68	1.15	1.15	1.15	1.15	1.08	0.85	0.55	0.25	0.00	0.00	0.00								
					0.4	0.4	0.55	0.85	1.08	1.15	1.15	1.15	1.15	1.08	0.85	0.55	0.25	0.00	0.00	0.00							
					-	0.4	0.4	0.55	0.85	1.08	1.15	1.15	1.15	1.15	1.08	22.0	0.55	0.25	0.00	0.00	0.00						
							0.4	0.4	0.55	0.85	1.08	1.15	1.15	1.15	1.15	1.08	0.85	0.55	0.25	0.00	0.00	0.00					
								0.4	0.4	0.55	0.65	1.68	1.15	1.15	1.15	1.15	3.08	0.85	0.55	0.25	0.00	0.00	0.00				
(r(10days)		0.4)	0.40	0.45	0.55	0.66	0.74	0.80	0.90	1.01	1.09	1.09	1.01	0.85	0.72	0.55	0.39	0.28	0.16	0.06	0.00	0.00	0.00	0.00			
ξ _c		0.4)			0.55			0.81			1.06			0.87			0.41			0.07			0.00				
Area W(10days)		0.143	0.285	0.43	0.57	0.71	0.56	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.71	0.57	0.43	0.285	0.143	0.00			
Vez T		0.21		٠.	0.57			1.00			1.00			1.00			1.00			0.57			0.14				
To	ĺ	110.7			70.1			45.7			\$6.4			75.0			116.7			151.6			218.1			- 1	٠
նց(1)	1	9.5			22.1			37.2			59.9			65.3			47.4			6.8			0.0				
iffective rain		1.1			1.2			43			10.8			19.9		·	40.5			12.1		· 	3.5				
Nace ted (mm)		8.4			20.9			32.7			49.1			45.4			6.9			0.0			0.0				

Sugarbeet; Sug	1.02 1.05 1	3 1	June 2 3
1 2 3 3 1 2 3 3 1 3 3 1 3 3 1 3 3 1 3 1	1.02 1.05 1		June 2 3
0.55 0.55 0.55 0.55 0.55 0.55 0.55 0.55	1.02 1.05 1		2 3
0.55 0.55 0.55 0.55 0.55 0.55 0.55 0.65 0.75 0.85 0.85 0.95 1.05 1.13 1.15 1.15 1.15 1.15 1.15 1.15 1.1	1.02 1.05 1		
0.55 0.55 0.55 0.55 0.55 0.55 0.65 0.75 0.85 0.95 1.05 1.13 1.15 1.15 1.15 1.15 1.15 1.15 1.1	1.05		
0.55 0.55 0.55 0.55 0.58 0.65 0.75 0.85 0.95 1.05 1.13 1.15 1.15 1.15 1.15 1.15 1.15 1.1			and the first
0.55 0.55 0.55 0.55 0.65 0.65 0.75 0.65 0.75 0.85 0.95 1.05 1.13 1.15 1.15 1.15 1.15 1.15 1.15 1.1	1.08 1		
0.55 0.55 0.55 0.55 0.58 0.65 0.75 0.85 0.95 1.05 1.13 1.15 1.15 1.15 1.15 1.15 1.15 1.1		1.05 1.02	2
0.55 0.55 0.55 0.55 0.58 0.65 0.75 0.85 0.85 0.85 1.05 1.15 1.15 1.15 1.15 1.15 1.15 1.1	1.12 1	1.08 1.06	5 1.02
Ke(1003)) 055 055 055 056 058 061 066 072 081 090 058 165 1.10 1.13 1.15 1.15 1.15 1.15 1.15 1.12 1.09	1.14 1	1.12 1.08	1.05 1.0
	1.08 0	0.00 1.00	5 1.04 1.0
Kc 0.55 0.56 0.66 0.89 1.09 1.15 1.13	0.73		1.04
	0.833 0	0.67 0.5	5 0.333 0.1
Area (2) 0.25 0.67 1.00 1.00 1.00 1.00 1.00	0.53		0.33
	218.1		218.1
	131.8		75.2
124(1)	3.5	18.0	3.5
Fireday Fain	128.3		71.7
Wite red (ma) 14.1 25.0 25.7 39.6 619 933 1705		Total	558.7 mm

Oil-seeds;					·			+ 2 +		* 1			<u> </u>		·		<u> </u>										
Month		Sep.	T	1.4	Oct.		٠.	Nov.			Dec.			Jao.			Feb.	V.,		Mar.			Αpr.	7		May	- 1
10days	1 1	2	3	1	2	3	1	2	- 3	1_	2	3	1	_ 2	3	1_	2	3	1	2	3	1	_1_	3	_1_	. 2	3
		0.4	0.4	0.40	0.40	0.46	059	0.71	0.64	0.96	1.09	1.15	1.15	1.15	1.15	1.15	1.15	1.10	0.96	0.78	0.59	0.4				100	
4.0		. *	0.4	0.4	0.40	0.40	0.46	0.59	0.71	0.84	0.96	1.09	1.35	1.15	1.15	1.15	1.15	1.15	1.10	0.96	0.78	0.59	0.4		٠. ٠.		. 1
			100	0.4	. 0.4	0.40	0.40	0.46	0.59	0.71	0.84	0.96	1.09	1.15	1.15	1.15	1.15	1.15	1.15	1.10	0,96	0.78	0.59	0.4			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					0.4	0.4	0.40	0.40	0.46	0.59	0.71	0.54	0.96	1.09	1.15	1.15	1.15	1.15	1.15	1.15	1.10	0.96	0.75	0.59	0.4		
Kc(10days)		0.42	0.40	0.40	0.43	0.42	0.46	0.54	0.65	0.78	0.90	1.01	1.09	1.13	1.15	1.15	1.15	1.14	1.09	1.00	0.86	0.68	0.59	0.50	0.4)	0.00	0.00
K.		0.4)			0.41			0.55			0.90			1.12		200	1.15	27.0		0.98			0.59		1.	0.13	
Area W(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00	
Area 7		0.38			0.92			1.00			1.00	100		1.00		*	1.00			1.00	1.5		0.75			0.13	
ĿΤο		55.7		10.0	110.7		. 1	. 20.1		÷ . ' .	45.7	11.		\$5.4		٠.	75.0		1	116.7			161.6	17.	1.7	218.1	
Req(I)		23.8			41.1			33.6	- 1	, .	40.9			63.3	- · · ·		85.9	-		114.6		100	71.1	11.	. j. 14	3.6	
Effective mis		16.6			1.1			1.2			4.5		195	10.5		1.	19.9			43.5			12.1			35	
Waterreq (mm)	T	7.2			40.0			37.4			36.4			52.5			66.0			74.1			59.3			0.1	
						_																			Tabel	2770	

Rabi.Fodder,			· · ·	11 - 1	: .		4 J	**	1 2				***										<u> </u>			<u> </u>	
Month		Oct.		11.	Nov.		1500	Dec.	1.1	4.3	Јал.			Feb.	1. 2.	-	Mar.		2.19	Apr.		100	May	3.1		June	
10days	1	2	3	1 _	_2	3	1	2	3	1	2	3	_1_	2	3_	1	2	3	1	2	3	1	2	3	<u> </u>	2	3_
	0.5	0.5	0.5	0.50	0.50	0.50	0.56	0.58	0.81	0.93	1.02	1.05	1.05	1.05	1.65	1.05	1.05	1.05	0.4					4.00			
	1994	0.5	0.5	0.5	0.50	0.50	0.50	0.56	83.0	0.81	0.93	1.02	1.05	1.05	1.65	1.05	1.65	1.05	1.65	0.4				100		0	
	l		0.5	0.5	0.5	0.50	0.50	0.50	0.55	0.68	0.81	0.93	1.02	1.05	1.05	1.05	1.65	1.05	1.05	1.05	0.4		1.14		1.		
	l			0.5	0.5	0.5	0.50	0.50	050	0.56	0.68	0.81	0.93	1.02	1.05	1.05	1.05	1.05	1.65	1.65	1.05	0.4	· 1		100	100	
					0.5	0.5	0.5	0.50	0.50	0.50	0.55	0.68	0.51	0.93	1.02	1.05	1.95	1.05	1.65	1.05	1.65	1.05	0.4	•			
			14.0	100		0.5	0.5	0.5	0.50	0.50	0.50	0.56	0.65	0.81	0.93	1.02	1.05	1.05	1.05	1.05	1.55	1.05	1.05	0.4	- 7	1 1 1	
Kerl(days)	0.50	0.50	0.50	0.50	0.50	0.50	051	051	0.59	0.66	0.75	0.84	0.92	0.99	1.93	1.65	1.05	1.05	0.91	0.92	0.89	0.83	0.73	0.40			
Ke	424	0.50		-	0.50			0.55			0.75			0.98			1.05			0.92			0.65				
Area % (1002ys)	1.667		0.50	0.67	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.67	0.50	0.31	0.17	٠.		٠.
	1.007	0.83	V	0.07	0.83	•~~		1.00			1.00			1.00			1.00	-	•	0.83			0.33		1.	4	
Area G					70.1	~		65.7		-	55.4	3000		. 75.0			116.7	٠.	15.5	161.6	11		216.1		10		
ETo	9	110.7				11.			1		42.4			73.3		. 11	122.3			123.4	5.5	100	47.5				
Req (1)		46.1		1.5	29.2			25.0					100	19.9			49.5	1.		12.1	1.7	, A.,	33	1.	9 1	100	200
Effective rain	<u> </u>	1,1		<u>:</u> -	12			45			10.8									1113		<u> </u>	11.0				
Witerred (mm)	L	45.0			28.0			20.5			31.6			53.4			81.8			1113							
1 to 1 to 1		12					4. 1	100										5000		17.4		Tetal	455.7	D 43			

Onion;	• •		1.0	, Pa	19.77	. 1	, «'	: .		100	300				1.11	-1		: 						- 7	21			
Month	7.7	Jan.	100		Feb.	100	1.1	Mar.	:" .		Avr.			May	T 15	10	June		1.	1	oł.			Ang			Sep	. '
10days .	1	2	3	1.	2	3	1	_ 2	3	1	2	3	_1_	2	3	1	2		1		2	3	1		3	1	2	
	0.50	050.	0.55	0.69	0.87	1.06	1.15	1.15	1.15	1.15	1.68	0.93	٠.		. 4.4	-												
		030	0.50	0.55	0.69	0.87	1.06	1.15	1.15	1.15	1.15	1.08	0.93	4	, S	1	1.17			٠.	y .	· *		1				
			0.50	0.50	0.55	0.69	0.87	1.06	1.15	1.15	1.15	1.15	1.08	0.93	100			7.1						43		. 194	. 1	12
		* * *	1, 1	0.50	0.50	0.55	0.69	0.87	1.06	1.15	1.15	1.15	1.15	83.1	(69)												·	<u> </u>
Kr(10days)	0.50	0.50	0.52	0.56	0.65	0.77	0.94	1.06	1.13	1.15	1.13	1.08	165	1.01	0.93													
K.		051			0.67			1.64		1.7	1.12	-	100	1.00	7.1		100					٠.,	,		: -	.*	1000	
Area 2 (10days)	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	1.37				3				7 L				1.5
Au 7		1.00	1	ter et	1.00	1,		1.00		- 1	1.00		$i \in J_{i}$	050	1 :		11.0									1000	1 61	
ETo		56.4	1.5	7.5	75.0		1.5	116.7	1.0		161.6	1.5		218.1	100		4.7						7					100
Req(1)		28.5	8	1.3	50.1	1111	jer e	121.7			151.0			108.6	P.	1.14			2 L		. · .						4.4	- 1.
Effective rain	2.3	10.8	19.0	٧.	19.9	1 443		403			12.1			1.5		+ + + i										·	·	
Water reg (mm)		17.7			30.2			81.2		1.5	168.9	- · ·		105,1								5 3 2						

Table E2.2 Crop Water Requirement in Munda Dam Multipurpose Project (2/3)

Mooth		Oct.			Nov.			Dec.			Jan.			Feb.			Mar.			۸v.	
10days	1	2	3	1	2	3	:1	2	3	1	2	3	1	2	3		. ?	3	1	2	
	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	60	0.9	0.9	0.9	0.9						
		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9					
			0.9	0.9	0.9	0.9	9	0.9	0.9	0.9	0.9	0.9	0.9	6.9	0.9	0.9	6.0				
				0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	9.0	0.9	0.9	0.9	0.9	0.9			
Ke(10days)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Kc		0.90			0.90			0.90			0.90		-	0.90			0.90				
Area 9 (1961)3)	0.25	0.5	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25			
Arta S		0.50			1.00			1.00	٠.		1.00			1.00	-		0.50				
ETo	•	110.7			70.1			45.7			56.4			75.0		100	116.7				
Reg (1)		49.8			63.1			41.1	100		50.8			67.5			52.5				
Effective rain	i	1.1			1.2			4.5			10.8			19.9			40.5				
Water req.(mm)		48,7			61.9			36.6			40.0			47.6			12.0			0.0	
																		7	Total	246.8	ne ma

Maîze:			٠.	7				•	٠											<u> </u>	
Month		Jone			July	٠.		Ang.			Sep.			O.L			Nov.			Dec.	
10days	1	2	- 3	1	2	3	.1	2	3	1	2	3	1	2	3	1		3_	1		3_
	0.41	0.41	0.50	0.69	0.65	1.04	1.10	1.10	1.10	1.03	0.50	0.47									1.
		0.41	0.41	0.50	0.69	0.88	1.04	1.10	1.10	1.10	1.03	0.80	0.47		12						
		100	0.41	0.41	0.50	0.69	0.88	1.04	1.10	1.10	1.10	1.03	0.60	0.47							
				0.41	0.41	0.50	0.69	0.88	1.04	1.10	1.10	1.10	1.03	0.80	0.47						
Ka(10days)	0.41	0.41	0.41	0.50	0.62	0.78	0.93	1.03	1.09	1.08	1.01	0.85	0.77	0.64	0.47						
Ke		0.42			0.63			1.01	1.2		0.98		į.	0.62							
Arta % (10days)	0.25	0.5	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	620	0.25						
Arca %		0.50			1.00		٠.,	1.00	100		1.00			0.50						:	
Elo		257.0			227.3			197,0			155.7	-		110.7						100	
Reg (1)		54.0			144.0	٠.		122.8	1.5	41.	155.5	1.	٠.	345			1			- 1	
Effective run		6.3			75.7	100		79.3			16.6			1.1							
Water reg.(mm)		47.7			68.3			120.5			138.9			33.4			0.0			0,0	·
						-									-	Total	406.8	6 33	·		

Tobacco;	1.75		1			1			, to				· .				i .				
Month	Γ	Feb.			Mar.			Apr.			May			June			July			Aug.	
10days	1	2	3_	. 1	2	3	1	2	3		2	3	1		3	1	2	3	1	2	3_
į		0.56	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	0.93	0.30		- 1					
			0.56	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	0.93	0.50		. 19				
1.4				0.56	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	6.93	0.80	100				2
			1.5		0.55	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	0.93	0.80		1.5		
	١.	4, 11.1		- 1		0.56	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	0.93	0.80	100		1.50
3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1		· .	100	100		0.56	0.73	0.97	1.14	1.20	1.20	1.20	1.20	1.20	1.17	1.07	0.93	0.80		
Ke(10days)		0.56	0.65	0.75	0.85	0.92	0.97	1.07	1.15	1.19	1.20	1.17	1.13	1.06	1.03	0.99	0.93	0.87	0.80		
Ke		0.60			0.84			1.06	,		1.19			1.07			6.93			0.80	
Area 4 (10days)		0.1666		0.50		0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.67	0.50	0.33	0.17	0.00	0.00
Area %		0.25		- :	0.67			1.00			1.00			0.94		100	0.50		12.0	0.06	
Efo		75.0			116.7			161.6	100	1.1	218.1	1.0	·	257.0			227.3	1.7%	11/20	197.0	
Req(I)		11.3			65.4	100		171.9		100	258.7			260.8	100	1.	105.7	٠.		8.8	4
Effective rain	į į	19.9			40.5	'		12.1			3.5			6.3			75.7			79.3	
Water req (mm)	1	0.0			249			159.8			255.2			254.5			30.0			0.0	-
																	-		Total	724.5	മാത

Kharif Fooder,	20	ř.		1 - 1		٠	1.	. w.		100	+ + 1	4, 1				1.1	4		· . ·		
Month 10days	1	Apr.	3	. ,	May 2	3	1	June 2	3	1	July Z	3	1	Ang.	3	· . 1	Sep.	3	1	Oct. 2	3
	0.50	0.50	0.50	0.59	0.75	0.96	1.05	1.05	1.05	1.05	1.05	1.05	100						100	and the second	1.
		0.50	0.50	0.50	0.59	0.78	0.96	1.05	1.05	1.05	1.05	1.05	1.05			100	100		7		
			0.50	0.50	0.50	0.59	0.78	0.96	1.05	1.05	1.05	1.05	1.05	1.05		100	100		٠, ٠	197	
				0.50	0.50	0.50	0.59	0.78	0.96	1.05	1.65	1.05	1.65	1.05	1.05			250			
,		186	1		0.50	0.50	0.50	0.59	0.78	0.96	1.65	1.66	1.05	1.95	1.05	1.65	100				1
10 mg 1				100		0.50	0.50	0.50	0.59	0.78	0.96	1.05	1.65	1.05	1.05	1.05	1.05	3			
		·				5.5	0.50	0.50	0.50	0.59	0.78	0.96	1.05	1.05	1.55	1.05	1.05	1.05			
Kq 1002ys)	0.50	0.50	0.50	0.52	057	0.64	0.70	0.78	0.85	0.93	1.00	1.04	1.05	1.65	1.05	1.05	1.05	1.05	<u> </u>		
K.		0.50	1		0.58	9.0		0.78	1.5		0.99		× .	1.05			1.05				٠.
Area F(10days)	0.13	0.25	0.38	0.50	0.63	0.88	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.63	0.50	0.38	0.25	0.13			
Area 4	100	0.25			0.67	1	1	1.00			1.00			0.67		5.1	0.25		1.4	Sec. 3.	1
ETo	1. 7	161.6			218.1	11	1.0	257.0	1.0		227.3			197.0			153.7		1.		
Req (1)	1.5	20.2	٠.		. 84.1	1.74	100	199.4		٠.	224.9			137.9			41.7		11		
Effective rain	4.4	12.1			3.5		1 1	6.3			75.7	<u> </u>		79.3		<u> </u>	16.6				
Waterreq (mm)		8.1			80.6			193.1			149.2			58.6			25.1			0.0	

Pulses:	1.7				44 []			1 1 1	divi			1.00								, i	1476
Month 10days	1	Apr.	3		May 2	3	1	Jone 2	3	1	July 2	3	1	Ang.	3_		Sep.	3	1 2		
		4.		0.50	0.64 0.50	0.83 0.64	0.97 0.83	1.10 0.97	1.10 1.10	1.10 1.10	1.10 1.10	1.09 1.10	1.04	0.93 1.04	0.83	0.85					
			٠		. P	0.50	0.64 0.50	0.83 0.64	0.97 0.83	1.10 0.97	1.10 1.10	1.10 1.10	1.10 1.10	1.09 1.10	1.04	0.93 1.04	0.85 0.93	0.85		616	1 16
q(10days)	-			0.50	0.57	0.66	0.73	0.88	1.00	1.07	1.10	1.10	1/8	1.04	0.98	0.94	0.89	0.85			
c rea T(10days)				0.25	057 050	0.75	1.00	0.87 1.00	1.00	1.00	1.09 1.00	1.00	1.00		1.00	0.75	0.89 0.50	0.25			111
zea % To		4.		14 3	0.50 218.3			1.00 257.0			227.3			1.00 197.0			0.50 158.7	33			}
eq(l) (fective rain			:		- 62.5 3.5	fig.		224.2 6.3		` .	247.4 75.7			203.6 79.3			70.9 16.6	19.5	:-		14 2
eter red (mm)		0.0			59.1	-	-	217.9			171.7			1213	- : : : :	Total	51.3 627.3	mm			

Table E2.2 Crop Water Requirement in Munda Dam Multipurpose Project (3/3)

Month		Αr.			May			Jone			July			Aug.			Sep.	
10days	1	2	3	1.1	2	3	. 1	2	3	1	2			2	_ 3	1	. 2	3
	0.50	0.50	0.64	0.83	0.97	1.07	1.10	1.10	1.10	1.10	1.09	1.64	0.98	0.89	0.65			
		0.50	0.50	0.64	0.83	0.97	1.07	1.10	1.10	1.10	1.10	1.09	1.04	0.93	0.89	0.85		
,			0.50	0.50	0.64	0.83	0.97	1.07	1.10	1.10	1.10	1.19	1.09	1.04	0.95	0.89	0.85	
				0.50	0.50	0.64	0.63	0.97	1.07	1.10	1.10	1.10	1.10	1.09	1.04	0.98	0.89	0.65
Ke(10days)	050	0.50	0.55	0.62	0.73	0.88	0.99	1.06	1.09	1.10	1.10	1.08	1.05	1.00	0.94	0.91	0.87	Q.J
Ke		0.52			0.74			1.05			1.09			1.00			0.88	
Area & (10days)	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.7
Area 4		0.50	400		1.00		100	1.00			1.00			1.00			0.50	
ETo		161.6			218.1			257.0			227.3			197.0			158.7	
Rea (1)		41.6			161.8			269.4			248.5			1965			69.5	
Effective run		12.1			3.5			6.3			75.7			79.3			16.6	
Water reg (mm)		29.5			153,3			263.1			172.8			117.2			52.9	
																Total	793.9	m m

Sugarcane;		P. 1				1.		4 5 5										
Month	T	Jan.			Feb.	-:		Mar.			Apr.			May			Jen.	
10days	1 1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	. 1	2	_ 3
	0.83	0.84	0.86	0.88	0.89	0.90	0.90	0.91	0.91	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.89	0.8
Kc(10days)	0.83	0.84	0.86	0.88	0.89	0.90	0.90	0.91	0.91	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.89	0.8
Kc		0.84			0.89			0.91		1	0.92			0.91			0.88	7.
Area 4(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %	100	1.00			1.00	100		1.00			1.00			1.00			1.00	
eTo T3	1.1	\$5.4		4	. 75	100	1.1	116.7			161.5			218.1			257.0	
Reg (1)		47,6	200	5 1 1	66.7			105.8	100		148.1			197.4		100	225.2	
Effective rain	1 1	10.5	1.	. 1-	19.9	3 1 1 d		40.5			17.1			3.5			6.3	
Waterren (mm)		36.8			45.8			65.3			136.0			193.9			218.9	

Month		Jul.			Ang.	:	100	Sep			Oct			Nev.	8 July 1		Dec.	
10days	1	2	. 3	1	` 2	3	1	2	3	1	2	3	1	3	3	1	2	3_
	0.80	0.75	0.73	0.70	0.68	0.68	0.67	0.66	0.66	0.66	0.67	0.69	0.71	0.74	0.76	0.78	0.81	0.8
Ker (Otays)	0.80	0.75	0.73	0.70	0.63	0.68	0.67	0.66	0.66	0.66	0.67	0.69	0.71	0.74	0.76	0.78	0.81	0.8
Ke	100	0.76			0.69	7 1		0.66			0.67		4	0.74			0.80	
Area % (10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Area G	٠.	1.00		٠	1.00	100		1.00			1.00			1.00			. 1.00	
Efo	1	227.3			197.0	No. 17 (1997)		158.7	100		110,7		1000	70.1		100	45.7	- *
Req (1)	1	171.9	40.		135.5	1		105.5			74.5	100	٠.,	51.7	7.	1 1 to	36.7	
Effective min	- 4	75.7	19.7		79.3			16.5			1.1			1.2			4.5	
Water req.(mm)		96.2			55.2	-		88.9	100		73.4			50.5			32.2	٠.
					200										T	stal	1095.2	5 63

Month		Jan.			Fcb.			Mar.			Arr.	100		May	1 4 4 5		un.	
10days	1	2	3	1	2 ′	3	1	2	3		2	3	1	2	<u> </u>	1	2 '	3
	0.80	0.80	0.80	0.80	0.80	0.80	0.50	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.83	0.8
Kar (Odays)	0.80	0.50	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.50	0.80	0.50	(8.9)	0.8)	0.80	0.80	0.5
Kc		0.80			0.80			0.80		: :	0.80	33.37	et seen	0.80	11,114	1.0	0.80	
Area % (10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Area %		1.00	1.7	*	2.00	100		1.00	100	100	1.00	- 1		1.00		11 T	1.00	
ETo	1.5	56.4			75			116.7		7 - 1	161.6	T		218.1	1		257.0	
Req (1)		45.1	1.5	1.0	60.0		1	93.4			129.3		100	1745			205.6	4
Effective rain		10.8	1,44	1	19.9	100	<u> </u>	40.5	21 .		12.1			3.5	<u> </u>		6.3	- 6
Water reg (mm)		34.3	1.1	e	40.1			52.9			117.2			171.0			199.3	

Month		Jul.			Aug.			Sep	4. (4.)		Oct.			Nev.			Dec.	2.5
10days	1	2	3	1 '	2	3	1	2	3	1	2 .	3	1	2	3	1	2	. 3
	0.80	0.80	0.50	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Ke(10days)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	9.80	0.80	0.50	0.80	0.80	0.80	0.80	0.80	6.80	0.80
Ke		0.80			0.80			0.80	*4		0.80		,	0.80	141		0.80	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Acca St		1.00		200	1.00		100	1.00	1.5		1.00	100	- 1. T.	1.00			1.00	
EΓο	1.	227.3			197.0	1.0		158.7			110.7	•		70.1		100	- 45.7	
Req (1)		181.8		42 425	157.6	A11. 1.		127.0	100		88.6		1.174	55.1	100		36.6	÷
Effective rain		75.7		,	79.3	5		16.6	1.1		1.1	1000		1.2			4.5	
Waterren (mm)		106.1			78.3		7 1 .	110.4			87.5			5 4.9			32.1	
		· · ·													T .	ola!	1083.9	to co

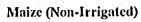
Table E2.3 Irrigation Water Requirement in New Command Area for Munda Dam Multipurpose Project

Orchard	34.3	1.0	52.9	117.2	171.0	199.3	106.1	78.3	110.4	87.5	9.30	32.1	0 600
	6.8	6.8	5.3	136.0	3.9	8.9	6.2	6.2	8.9	3.4	505	2.2	
Sugarcane		प		ដ	. 25	ដ	5	ν,			41		
K. Vegetables	0.0	0.0	0.0	35. 5.	158.3	263.1	1728	117.2	52.9	0.0	0.0	0.0	0 000
Pulses X.	0.0	0.0	0.0	0.0	29.1	2179	171.7	124.3	2	0.0	0.0	0.0	* 500
K.Fodder	0.0	0.0	0:0	8.1	9.08	193.1	149.2	58.6	1.51	0.0	0.0	0.0	
Tabacco X	00	0.0	24.9	159.8	255.2	254.5	30.0	0.0	0.0	0.0	0.0	0.0	
Maize	0.0	0.0	0.0	0.0	0.0	47.7	68.3	120.5	138.9	33.4	0.0	0.0	2 000
R.Vegetables	40.0	47.6	12.0	0.0	0.0	0.0	0.0	0.0	0.0	48.7	613	36.6	0.000
Onion R	17.7	30.2	81.2	168.9	105.1	0.0	00	00	00	0.0	0.0	0.0	
Rabi-Fodder	31.6	53.4	81.8	111.3	0.1	0.0	0.0	0.0	0.0	45.0	28.0	20.5	
Oil-seeds R	52.5	0.98	74.1	59.3	0.1	0.0	0.0	0.0	7,2	40.0	37.4	36.4	
Sugarboot	39.6	67.9	93.5	170.5	123,3	7.17	0.0	0.0	0.0	14.1	я 6.	25.7	֓֞֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜
Wheat	49.1	45.4	6'9	0.0	0.0	0.0	0.0	0.0	0.0	8.4	20.02	32.7	
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jui.	Aug.	· &	, to	Nov.	Jet Det	

Irrigation Water Requirement in New Command Area

			:								Total Crop Intensity:	nsity:	164.0	1 %	Irr.Eff.	54.00%
Crops	Wheat	Sugarbeat	Oil-seeds	Rabi-Fodder	Onion	R.Vegetables	Maize	Tabacco	K.Fodder	Pulses	K.Vegembles	Sugarcane	Orchard	Net.Total	Gross.Total	Total
real Percentage													7.72			ે
	30.00	0.00	200	3.00	00.9	7.00	27.00	0.00	3.00	4.00	8.00	30,00	8.00	(mm)	(mm)	1,000 acre)
Jan.	14.73	0.00	1.05	\$6.0	7.06	2.80	00.0	0.00	0.00	0.00	00:00	11.04	2.75	34.37	63.64	3,396
Feb.	13.63	0.00	1.32	1.60	1.81	3.33	00:0	0.0	0.00	0000	0.00	14.05	3.21	38.95	72.13	4.261
Mar.	208	0.00	1.48	2.46	4.87	28.0	00.0	1.50	0.00	000	0.00	19.59	4.23	37.05	68.60	3,660
Apr.	8.0	000	1.19	3,34	10.13	0.00	000	9.59	0.24	000	2.36	40.79	9.37	77.02	142.62	7.863
May	80	0.00	000	1.32	6.31	0.00	00.00	15.31	242	236	12.67	58.16	13.68	112.23	207.84	11.089
Jun.	8.0	000	8.0	00.0	0.0	0.00	12.87	15.27	5.79	8.73	21.05	89'59	15.94	145.33	269.13	14.838
Ä	0.0	00.0	8.0	00.0	8.0	00.00	18.43	1.80	4.48	6.87	13.83	28.86	8.49	82.75	153.24	8.176
Aug.	0.0	00.0	8.0	00.00	0.00	0.00	32.53	8.0	1.76	4.97	82.6	16.87	6.26	71.77	132.92	7.092
Sep.	0.0	00.0	0.14	0.00	8.0	0.00	37.51	8.0	0.75	2.17	5	26.66	8.83	80.30	148.70	8.198
ਸੂ 0	2.52	00.0	0.80	1.35	8.0	3.41	9.03	8.0	0.0	0.00	0.00	22.03	7.80	46.13	85.43	4.558
Nov.	6.27	00:0	0.75	0.84	8.0	4.33	00.0	0.00	0.0	000	0.0	15.15	4.39	31.73	58.76	3.239
Dec	9.80	0.00	0.73	0.62	0.00	2.56	00.0	0.00	00.00	000	0000	79.67	2.56	25.94	48.03	2.563
	49.02	0.00	7.46	12.47	24.19	17.28	110.37	43.47	15,44	25.09	63.51	328.55	86.72	783.57	1518.11	

Table E5.1 Crop Production Budget per Acre (1/20) without Project



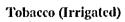
Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE	.*				
Main Crop	kg	461	7.0	3,227	2,807
By-product Credit	kg	922	0.12	111	96
Total Revenue (1)				3,338	2,904
EXPENSES					
Materials		Į į			
Seed	kg	25	8.0	200	200
Fertilizer	. *	1, 4			
N	kg	20	15.0	300	441
P	kg	0		0	
K	kg	, 0		. 0	
Plant Protection				0	
Labours					
(Hired Labour)					
Planting (Sowing)	md			0	
Fertilizer Application	md	1	72.0	72	54
Plant Protection (Bird Scaring)	md	7.4	72.0	533	400
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	4	72.0	288	216
Subtotal	md	15.4		1,109	832
(Family Labour)					
Planting (Sowing)	md		72.0	o	0
Fertilizer Application	nid	1.6	72.0	115	86
Plant Protection (Bird Scaring)	md	2	72.0	144	108
Weeding	md	~	72.0	0	0
Irrigation / Cleaning	md		72.0	ő	o O
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	3	72.0	0	0
Subtotal (3)	md :	6.6	12.0	475	356
		اممما		7/3	330
(Total Labour Requirement)	md	22.0			
Othora					
Others Land Description (Transfer)	00-0	3	75.0	225	196
Land Preparation (Tractor)	acre		75.0	75	65
Sowing (Tractor)	acte	1		37	37
Credit	acre	1	37.0		
Contingencies	acre	1		121	106
				2642	2 140
Total Expenses (2)				2,542	2,168
	7				
PRIMARY BENEFIT $(4) = (1) - (2)$				796	736
CASH BALANCE $(5) = (4) + (3)$				1,271	1,092

Table E5.1 Crop Production Budget per Acre (2/20) with Project

Maize (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Valu
And the second section of		Unit/Acre	RS/Unit	RS/Acre	RS/Acı
REVENUE		1. P			e e e e e e e e e e e e e e e e e e e
Main Crop	kg	1,000	7.0	7,000	6,090
By-product Credit	kg	2,000	0.12	240	209
Total Revenue (1)				7,240	6,29
EXPENSES					* 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
Materials		1.50 (
Seed	kg	18	8.0	144	14
Fertilizer		1 1			
N	kg	50	15.0	750	1,10
P	kg	25	20.0	500	57
K	kg	0	18.0	0	1
Plant Protection	acre	1		310	310
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Labours		2.0	**************************************		
(Hired Labour)			2.7		
Planting (Sowing)	md		72.0	0	
Fertilizer Application	md		72.0	0	
Plant Protection	md		72.0	0	
Weeding	md		72.0	0	
Irrigation / Cleaning	md		72.0	0	
Harvesting / Grading / Packing	md	4	72.0	288	21
Threshing .	md	4	72.0	288	21
Subtotal	md	8.0		576	43
(Family Labour)					
Planting (Sowing)	md	1	72.0	72	5
Fertilizer Application	md	2.0	72.0	144	10
Plant Protection	nid	10	72.0	720	54
Weeding	md	2	72.0	144	10
Irrigation / Cleaning	md	7	72.0	504	37
Harvesting / Grading / Packing	md	4	72.0	288	21
Threshing	md	4	72.0	288	21
Subtotal (3)	md	30.00		2,160	1,62
(Total Labour Requirement)	md	38.0			
(Total Edebat Requirement)					
Others					
Land Preparation (Tractor)	no	4	75.0	300	26
Sowing (Tractor)	no	2	75.0	150	13
Credit	acre	1	, ,3.0	37	3
Contingencies	acre	1		246	23
Contingencies	acic	•		240	
Total Expenses (2)				5,173	4,7 0
Total Expenses (2)				3,1.3	1
PRIMARY BENEFIT (4) = (1) - (2)	* * * * * * * * * * * * * * * * * * * *		1	2,067	1,59
	 A Company of the Compan			1 Z.UU/	1,39,

Table E5.1 Crop Production Budget per Acre (3/20) with Project



I tem	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	1,025	41.0	42,025	36,268
By-product Credit	kg				
Total Revenue (1)		1.1		42,025	36,268
EXPENSES					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Materials					
Seed	g	5	320.0	1,600	1,600
Fertilizer					4
N	kg	25	15.0	375	551
P	kg	35	20.0	700	798
K	kg	30	18.0	540	394
Plant Protection	no	2	310.0	620	620
Labours					
(Hired Labour)	1 1 N				
Planting (Sowing)	md	1.5	72.0	108	81
Fertilizer Application	md		72.0	0	C
Plant Protection	md		72.0	0	(
Weeding	md	4	72.0	288	216
Irrigation / Cleaning	md		72.0	0	
Harvesting	md	6	72.0	432	324
Curing	md		72.0	0	0
Subtotal	md	11.5	12.0	828	621
	ING	11.5	1	626	021
(Family Labour)		3.0	12.0	216	162
Planting (Sowing)	md	3.0	72.0 72.0	108	81
Fertilizer Application	nıd	1.5		144	108
Plant Protection	md	2	72.0	360	270
Weeding	md	5	72.0		
Irrigation / Cleaning	md	7	72.0	504	378
Harvesting	md	11	72.0	792	594
Curing	md	5	72.0	360	270
Subtotal (3)	md	34.5		2,484	1,863
(Total Labour Requirement)	md	46.0			
Others	100				
Land Praparation (Tractor)	no	5	75.0	375	326
Sowing (Tractor)	по	3	75.0	225	196
Credit	acre			150	150
Contingencies	acre	- 7-11-5		395	356
Total Expenses (2)				8,067	7,280
PRIMARY BENEFIT (4) = (1) - (2)		3 (1.5 %)		33,958	28,988
CASH BALANCE $(5) = (4) + (3)$	43-50 144		10 10 10 10	36,442	30,851

Table E5.1 Crop Production Budget per Acre (4/20) with Project

K.Fodder (Irrigated)

ltem	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	9,000	0.84	7,560	6,577
By-product Credit	kg		e syl		
Total Revenue (1)				7,560	6,577
EXPENSES					
Materials					
Seed	kg	25	12.6	315	315
Fertilizer	Ĭ				
N	kg	40	15.0	600	882
P	kg	0		0	0
K	kg	0		0	0
Plant Protection				0	0
Labours					
(Hired Labour)					
Planting (Sowing)	md		72.0	0	0
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	C
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md		72.0	0	0
Subtotal	md	0		0	0
(Family Labour)					
Planting (Sowing)	mđ		72,0	0	0
Fertilizer Application	md	1.5	72.0	108	81
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	.0
Irrigation / Cleaning	md	3.5	72.0	252	189
Harvesting / Grading / Packing	nıd	13	72.0	936	702
Subtotal (3)	md	18.0	San San	1,296	972
(Total Labour Requirement)	md	18.0	1.5 4.5		
Others					
Land Praparation (Tractor)	no	3	75.0	225	196
Sowing (Tractor)	по	1	75.0	75	65
Credit	acre			62	62
Contingencies	acre			129	125
Total Expenses (2)				2,627	2,551
PRIMARY BENEFIT (4) = (1) - (2)				4,933	4,026
CASH BALANCE $(5) = (4) + (3)$				6,229	4,998

Table E5.1 Crop Production Budget per Acre (5/20) with Project

K.Vegetable (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	4,788	5.5	26,334	22,911
By-product Credit	kg				
Total Revenue (1)				26,334	22,911
EXPENSES					
Materials					·
Seed	kg	3	62.0	186	186
Fertilizer					
N	kg	52	15.0	780	1,147
P	kg	25	20.0	500	570
K	kg	18	18.0	324	237
Plant Protection	по	2	310.0	620	620
Labours					
(Hired Labour)			1.7		
Planting (Sowing)	md	4	72.0	288	216
Pertilizer Application	md	3	72.0	216	162
Plant Protection	md	2	72.0	144	108
Weeding	md	10	72.0	720	540
Irrigation / Cleaning	md	4	72.0	288	216
Harvesting / Grading / Packing	md	13	72.0	936	702
Subtotal	md	36		2,592	1,944
(Family Labour)					
Planting (Sowing)	md	4	72.0	288	216
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md	3	72.0	216	162
Harvesting / Grading / Packing	md	5	72.0	360	270
Subtotal (3)	md	12		864	648
(Total Labour Requirement)	md	48.0			
Others					
Land Praparation (Tractor)	no	6	75.0	450	392
Sowing (Tractor)	no	3	75.0	225	196
Credit	acre			150	150
Contingencies	acre			335	304
Total Expenses (2)				6,801	6,197
PRIMARY BENEFIT (4) = (1) - (2)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1		19,533	16,714
CASH BALANCE $(5) = (4) + (3)$				20,397	16,066
		1 7	7 7 7 7		

Table E5.1 Crop Production Budget per Acre (6/20) without Project

Pulses (Non-Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE				, , •	
Main Crop	kg	240	21.2	5,088	4,386
By-product Credit	kg			0	
Total Revenue (1)				5,088	4,386
EXPENSES	N. 1. 184				1
Materials					
Seed	kg	8	27.0	216	216
Fertilizer					
N	kg	0	15.0	0	0
\mathbf{P}	kg	0	20.0	0	0
К	kg	0	18.0	0	0
Plant Protection	no	1	310.0	310	310
Labours					
(Hired Labour)					
Planting (Sowing)	md	1.5	72.0	108	81
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md		72.0	0	0
Subtotal	md	4.5	.2.0	324	243
(Family Labour)	1113				
Planting (Sowing)	md	1	72.0	72	54
Fertilizer Application	md	0.5	72.0	36	27
Plant Protection	md	1	72.0	72	54
Weeding	nid	j	72.0	0	0
Irrigation / Cleaning	md		72.0	o o	ő
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	5	72.0	360	270
-	nd nd	10.5	12.0	756	567
Subtotal (3)	niq iiiq	15.0		/30	307
(Total Labour Requirement)	ma	13.0			
Ottor					
Others			75.0	150	121
Land Praparation (Tractor)	acre	2	75.0	150	131
Sowing (Tractor)	acre	1	75.0	75	65
Credit	acre			60 05	60
Contingencies	acre			95	80
mark Parameter (A)				1011	1 ene
Total Expenses (2)				1,911	1,606
	ļ				
PRIMARY BENEFIT $(4) = (1) \cdot (2)$			*****	3,177	2,780
CASH BALANCE $(5) = (4) + (3)$			200 1000	3,933	3,347

Table E5.1 Crop Production Budget per Acre (7/20) with Project

Pulses (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
و المستقد والمستقد المستقد		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	314	21.2	6,657	5,738
By-product Credit	kg				
Total Revenue (1)				6,657	5,738
EXPENSES					
Materials			27.0	216	216
Seed	kg	8	27.0	216	210
Fertilizer	1.0	16	15.0	240	353
N P	kg ka	14	20.0	240	319
r K	kg kg	0	18.0	0	0
Plant Protection	no	1	310.0	310	310
Flant Frotection	10		310.0	310	
Labours					
(Hired Labour)					
Planting (Sowing)	md	1.5	72.0	108	81
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
. Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	nid		72.0	0	0
Subtotal	md	4.5		324	243
(Family Labour)					
Planting (Sowing)	md	1	72.0	72	54
Fertilizer Application	md	0.5	72.0	36	27
Plant Protection	md	1	72.0	72	54
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	5	72.0	360	270
Subtotal (3)	md	10.5		7 56	567
(Total Labour Requirement)		15.0			
Others	 	2	75.0	150	131
Land Praparation (Tractor) Sowing (Tractor)	no acre	1	75.0	75	65
Credit	асте	•	,,,,,	60	60
Contingencies	acre			121	113
Comingenties					
Total Expenses (2)				2,457	2,312
PRIMARY BENEFIT (4) = (1) - (2)				4,200	3,426
CASH BALANCE (5) = (4) + (3)			1.00	4,956	3,993

Table E5.1 Crop Production Budget per Acre (8/20) without Project

Wheat (Non-Irrigated)

EVENUE Main Crop By-product Credit Total Revenue (1) XPENSES	kg kg	Unit/Acre 481 722	RS/Unit	RS/Acre	RS/Acr
Main Crop By-product Credit Total Revenue (1)		1	7.5		The state of the
By-product Credit Total Revenue (1)		1	7.5		
By-product Credit Total Revenue (1)		722		3,608	3,113
Total Revenue (1)			0.4	289	249
				3,896	3,363
	ŧ I				200 min 1
Materials			7 - 7		
Seed	kg	40	11.8	472	472
Fertilizer					
N	kg	20	15.0	300	44
P	kg	0		0	(
K	kg	0		0	
Plant Protection				0	
Labours		2.50			
(Hired Labour)					
Planting (Sowing)	md		72.0	0	
Fertilizer Application	md	100	72.0	0	
Plant Protection	md	1.5	72.0	108	8
Weeding	md		72.0	0	
Irrigation / Cleaning	md		72.0	0	
Harvesting / Grading / Packing	md	4	72.0	288	21
Threshing	md	5	72.0	360	27
Subtotal	md	10.5		756	56
(Family Labour)	,				
Planting (Sowing)	md	1	72.0	72	5
Fertilizer Application	md	0.5	72.0	36	2
Plant Protection	nd		72.0	0	
Weeding	md		72.0	0	
Irrigation / Cleaning	nid		72.0	0	
Harvesting / Grading / Packing	md	3	72.0	216	16
Threshing	md		72.0	0	
Subtotal (3)	md	4.5	72.0	324	24
(Total Labour Requirement)	md	15.0		327	•
(Total Labout Requirement)	l iliu	13.0			
0.5					
Others		2	75.0	150	13
Land Praparation (Tractor)	no	1	75.0 75.0	75	6
Sowing (Tractor) Credit	no		15.0	20	2
	acre			105	9
Contingencies	acre			103	
Total Evances (2)				2,127	1,97
Total Expenses (2)				2,127	1,97
	ļ			4 0/0	4 4 4 4 4 4
RIMARY BENEFIT (4) = (1) - (2) ASH BALANCE (5) = (4) + (3)			Artista de la composición del composición de la	1,769 2,093	1,39 1,63

Table E5.1 Crop Production Budget per Acre (9/20) with Project

Wheat (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	1,150	7.5	8,625	7,443
By-product Credit	kg	1,725	0.4	690	595
Total Revenue (1)		1.		9,315	8,039
EXPENSES					to the part
Materials					
Seed	kg	40	11.8	472	472
Fertilizer			. 4	:	
N	kg	50	15.0	750	1,103
P	kg	25	20.0	500	570
K State Comment	kg	0		0	0
Plant Protection				0	0
			,		
Labours					
(Hired Labour)			*		
Planting (Sowing)	md		72.0	0	0
Pertilizer Application	md		72.0	0	0
Plant Protection	md	1.5	72.0	108	81
Weeding	md		72.0	0	0
Irrigation / Cleaning	md	1.5	72.0	108	81
Harvesting / Grading / Packing	md	4	72.0	288	216
Threshing	md	5	72.0	360 864	270
Subtotal	md	12.0	*	804	648
(Family Labour)		1	72.0	72	54
Planting (Sowing) Fertilizer Application	md md	0.5	72.0	36	27
Plant Protection	md	0.5	72.0	0	0
Weeding	md	1 1 1	72.0	0	0
Irrigation / Cleaning	nd	1.5	72.0	108	81
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md		72.0	0	0
Subtotal (3)	md	6.0	,,,,,	432	324
(Total Labour Requirement)	md	18.0			
Others					
Land Praparation (Tractor)	no	4	75.0	300	261
Sowing (Tractor)	no	2	75.0	150	131
Credit	acre		1	20	20
Contingencies	acre			174	176
Total Expenses (2)				3,512	3,574
					A A TABLE
PRIMARY BENEFIT (4) = (1) - (2)				5,803	4,465
CASH BALANCE $(5) = (4) + (3)$				6,235	4,789

Table E5.1 Crop Production Budget per Acre (10/20) with Project

Sugar Beet (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acr
<u>REVENUE</u>					
Main Crop	kg	12,756	1.1	14,032	12,207
By-product Credit	kg				
Total Revenue (1)				14,032	12,207
EXPENSES					
Materials					
Seed	kg	7	15.0	105	105
Fertilizer					
$(10.8 \pm 0.00) \mathbf{N} \cdot (10.8 \pm 0.00) \cdot $	kg	45	15.0	675	992
P	kg	30	20.0	600	684
K	kg	20	18.0	360	26 3
Plant Protection	no	1	310.0	310	310
Labours					
(Hired Labour)					
Planting (Sowing)	md		72.0	0	(
Fertilizer Application	md		72.0	0	(
Plant Protection	mđ		72.0	0	(
Weeding	md		72.0	0	(
Irrigation / Cleaning	md		72.0	0	
Harvesting / Grading / Packing	md	7.5	72.0	540	405
Subtotal	md	7.5		540	405
(Family Labour)					
Planting (Sowing)	md	1.5	72.0	108	81
Fertilizer Application	md	1.5	72.0	108	81
Plant Protection	md	1	72.0	72	54
Weeding	md	4	72.0	288	216
Irrigation / Cleaning	md	7	72.0	504	378
Harvesting / Grading / Packing	md	7.5	72.0	540	405
Subtotal (3)	md	22.5		1,620	1,215
(Total Labour Requirement)	md	30.0			
Others					
Land Praparation (Tractor)	no	6	75.0	450	392
Sowing (Tractor)	acre	3	75.0	225	190
Credit	acre			150	150
Contingencies	acre			252	230
Total Expenses (2)				5,062	4,751
PRIMARY BENEFIT (4) = (1) - (2)				8,970	7,456
CASH BALANCE (5) = $(4) + (3)$				10,590	8,671

Table E5.1 Crop Production Budget per Acre (11/20) with Project

R.Fodder (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE		1.1			
Main Crop	kg	15,000	0.57	8,550	7,439
By-product Credit	kg				
Total Revenue (1)				8,550	7,439
EXPENSES					
Materials					
Seed	kg	8	27.0	216	216
Fertilizer					
N - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	kg	18	15.0	270	397
P	kg	27	20.0	540	616
K	kg	0		0	0
Plant Protection				0	0
		14 To 15			
Labours					
(Hired Labour)	100				
Planting (Sowing)	md		72.0	0	0
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md		72.0	0	0
Subtotal	md	0		0	0
(Family Labour)					
Planting (Sowing)	md	1	72.0	72	54
Fertilizer Application	md	1.5	72.0	108	81
Plant Protection	md		72.0	0	0
Weeding	mđ		72.0	0	0
Irrigation / Cleaning	md	5.0	72.0	360	270
Harvesting / Grading / Packing	md	18.5	72.0	1,332	999
Subtotal (3)	md	26.0		1,872	1,404
(Total Labour Requirement)	md	26.0			
Others					
Land Praparation (Tractor)	no	3	75.0	225	196
Sowing (Tractor)	no	1	75.0	75	65
Credit	acre			62	62
Contingencies	acre			163	148
Total Expenses (2)			A STATE OF STATE	3,348	3,038
PRIMARY BENEFIT (4) = (1) - (2)	V 14 1 1 1 1			5,202	4,400
CASH BALANCE (5) = $(4) + (3)$				7,074	5,804

Table E5.1 Crop Production Budget per Acre (12/20) with Project

R. Vegetables (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	7,500	3.0	22,500	19,575
By-product Credit	kg				
Total Revenue (1)				22,500	19,575
EXPENSES	:				
Materials		7.1			
Seed	kg	5	37.0	185	185
Fertilizer					
N	kg	52	15.0	780	1,147
P · · · ·	kg	25	20.0	500	570
K	kg	18	18.0	324	237
Plant Protection	rio .	2	310.0	620	620
Labours					
(Hired Labour)					
Planting (Sowing)	md	4	72.0	288	216
Fertilizer Application	md	3	72.0	216	162
Plant Protection	md	2	72.0	144	108
Weeding	md	10	72.0	720	540
Irrigation / Cleaning	md	4	72.0	288	216
Harvesting / Grading / Packing	md	13	72.0	936	702
Subtotal	md	36		2,592	1,944
(Family Labour)					
Planting (Sowing)	md	4	72.0	288	216
Fertilizer Application	· md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md	3	72.0	216	162
Harvesting / Grading / Packing	md	5	72.0	360	270
Subtotal (3)	md	12	· .	864	648
(Total Labour Requirement)	md	48.0			
Others					
Land Praparation (Tractor)	no	6	75.0	450	392
Sowing (Tractor)	no	3	75.0	225	196
Credit	acte			150	150
Contingencies	асте			335	304
Total Expenses (2)			and the second	6,800	6,196
PRIMARY BENEFIT (4) = (1) - (2)				15,701	13,379
CASH BALANCE $(5) = (4) + (3)$				16,565	14,027

Table E5.1 Crop Production Budget per Acre (13/20) without Project

Oil Seed (Non-Irrigated)

I tem	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE	1				
Main Crop	kg	190	11.46	2,177	1,879
By-product Credit	kg				
Total Revenue (1)	<u> </u>			2,177	1,879
EXPENSES					
Materials					47.41.44
Seed	kg	3	13.58	41	41
Fertilizer					
N	kg	20	15.0	300	441
P	kg	0	20.0	0	0
κ	kg	0		0	0
Plant Protection	no	1	310.0	310	310
Labours					
(Hired Labour)		40			
Planting (Sowing)	md	1	72.0	72	54
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	nıd		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md		72.0	0	1. 1. 1. 1. 1. 1. 1. 1. 0
Subtotal	md	4		288	216
(Family Labour)					
Planting (Sowing)	md			ja 0	0
Fertilizer Application	md	0.5	72.0	36	27
Plant Protection	md	1	72.0	72	54
Weeding	bin		72.0	0	0
Irrigation / Cleaning	md	0	72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	mđ	1.5	72.0	108	81
Subtotal (3)	md	6.0		432	324
(Total Labour Requirement)	md	10.0	1.50	t green process	
[발생선] 유민들은 보다 되었다.					
Others					
Land Praparation (Tractor)	no	2	75.0	150	131
Sowing (Tractor)	no	1	75.0	75	65
Credit	acre			20	20
Contingencies	acre			81	77
Total Expenses (2)				1,622	1,560
PRIMARY BENEFIT $(4) = (1) - (2)$				556	319
CASH BALANCE $(5) = (4) + (3)$		1 1 1		988	643

Table E5.1 Crop Production Budget per Acre (14/20) with Project

Oil Seed (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	404	11.46	4,630	3,996
By-product Credit	kg				
Total Revenue (1)				4,630	3,996
<u>EXPENSES</u>					
Materials				100	
Seed	kg	3	13.58	41	41
Fertilizer					
N	kg	25	15.0	375	551
P	kg	20	20.0	400	456
K	kg	0		0	0
Plant Protection	no	1	310.0	310	310
Labours					
(Hired Labour)				70	
Planting (Sowing)	md	1	72.0	72	54
Fertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	mđ		72.0	0	0
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	1.54	72.0	0	0
Subtotal	md	4		288	216
(Family Labour)					
Planting (Sowing)	md			0	0
Fertilizer Application	md	0.5	72.0	36	27
Plant Protection	md	1	72.0	72	54
Weeding	md		72.0	0	0
Irrigation / Cleaning	md	4	72.0	288	216
Harvesting / Grading / Packing	md	3	72.0	216	162
Threshing	md	2.5	72.0	180	135
Subtotal (3)	md	11.0		792	594
(Total Labour Requirement)	md	15.0			
Others				4.50	401
Land Praparation (Tractor)	no	2	75.0	150	131
Sowing (Tractor)	no		75.0	<i>7</i> 5	65
Credit	acre			20	20
Contingencies	acre			123	119
				0.400	2 420
Total Expenses (2)				2,498	2,438
#1 (No. 1) A 1 (A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A					
PRIMARY BENEFIT (4) = (1) - (2)	1 1 1 1			2,132	1,558
CASH BALANCE $(5) = (4) + (3)$	<u> </u>			2,924	2,152

Table E5.1 Crop Production Budget per Acre (15/20) without Project

Barley (Non-Irrigated)

I tem	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	373	7.0	2,611	2,245
By-product Credit	kg	560	0.4	224	193
Total Revenue (1)				2,835	2,438
EXPENSES					
Materials					
Seed	kg	32	11.0	352	352
Fertilizer			1.1		
N	kg	0		0	0
P	kg	0		0	0
K	kg	0	4	0	0
Plant Protection				0	0
Labours				Marine Programme	
(Hired Labour)				, Ne	
Planting (Sowing)	md		72.0	0	0
Fertilizer Application	md		72.0	0	0
Plant Protection	md	1.0	72.0	72	54
Weeding	mď		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	3.0	72.0	216	162
Threshing	md	3.0	72.0	216	162
Subtotal	md	7.0		504	378
(Family Labour)					
Planting (Sowing)	md		72.0	0	0
Fertilizer Application	md	0.5	72.0	36	27
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	2.5	72.0	180	135
Threshing	md		72.0	0	0
Subtotal (3)	md	3.0		216	162
(Total Labour Requirement)	md	10.0			
Others					
Land Praparation (Tractor)	no	2	75.0	150	131
Sowing (Tractor)	no	1	75.0	75	65
Credit	acre			20	20
Contingencies	acte		136 326	66	55
Total Expenses (2)				1,308	1,098
PRIMARY BENEFIT (4) = (1) - (2)	14.79 3.44			1,527	1,340
CASH BALANCE (5) = $(4) + (3)$		2.50	4 14 11 2	1,743	1,502

Table E5.1 Crop Production Budget per Acre (16/20) with Project

Barley (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE			,		
Main Crop	kg	700	7.0	4,900	4,214
By-product Credit	kg	1,353	0.4	541	465
Total Revenue (1)	100			5,441	4,679
EXPENSES	1.				
Materials					
Seed	kg	30	11.0	330	330
Fertilizer			* 5 .		
N	kg	16	15.0	240	353
P	kg	14	20.0	280	319
K	kg	0		0	0
Plant Protection				0	, s e. e. e. 0
Labours					
(Hired Labour)					
Planting (Sowing)	md		72.0	0	0
Fertilizer Application	md		72.0	0	0
Plant Protection	md	2.0	72.0	144	108
Weeding	md		72.0	0	C
Irrigation / Cleaning	mđ		72.0	0	C
Harvesting / Grading / Packing	md	7	72.0	504	378
Threshing	md	4	72.0	288	216
Subtotal	md	13.0		936	702
(Family Labour)					
Planting (Sowing)	md	1	72.0	72	. 5 4
Fertilizer Application	nıd	1.0	72.0	72	5 4
Plant Protection	md		72.0	0	C
Weeding	md		72.0	0	C
Irrigation / Cleaning	md	7	72.0	504	378
Harvesting / Grading / Packing	md	5	72.0	360	270
Threshing	md	4	72.0	288	216
Subtotal (3)	md	18.0		1,296	972
(Total Labour Requirement)	md	31.0			e a television de la co
Others					
Land Praparation (Tractor)	no	2	75.0	150	131
Sowing (Tractor)	acre	1	75.0	<i>1</i> 5	65
Credit	acre			20	20
Contingencies	acre			166	145
					[음 : 설문 폴
Total Expenses (2)				3,418	2,971
PRIMARY BENEFIT $(4) = (1) - (2)$				2,023	1,708
CASH BALANCE $(5) = (4) + (3)$			12 5 1	3,319	2,680

Table E5.1 Crop Production Budget per Acre (17/20) with Project

Sugarcane, Plant (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	21,000	0.9	18,900	16,311
By-product Credit	kg	i i			9 2
Total Revenue (1)				18,900	16,311
EXPENSES					
Materials					
Seed	kg	3,000	1.08	3,240	3,240
Fertilizer					
N	kg	60	15.0	900	1,323
P	kg	40	20.0	800	912
ĸ	kg	25	18.0	450	329
Plant Protection	_			o	0
		'		1. 1. 1. 1.	
Labours	4.				
(Hired Labour)					
Planting (Sowing)	md	4	72.0	288	216
Pertilizer Application	md		72.0	0	0
Plant Protection	md		72.0	0	0
Weeding	md		72.0	0	0
Irrigation / Cleaning	md		72.0	0	0
Harvesting / Grading / Packing	md	6.5	72.0	468	351
Subtotal	md	10.5		756	567
(Family Labour)					
Planting (Sowing)	md	4	72.0	288	216
Fertilizer Application	md	3.0	72.0	216	162
Plant Protection	md		72.0	0	0
Weeding	md	11	72.0	792	594
Irrigation / Cleaning	md	7	72.0	504	378
Harvesting / Grading / Packing	md	6.5	72.0	468	351
Subtotal (3)	md	31.5		2,268	1,701
(Total Labour Requirement)	mđ	42			
Others					
Land Praparation (Tractor)	no	6	75.0	450	392
Planting (Tractor)	acre	3	75.0	225	196
Credit	acre			150	150
Contingencies	acre			462	440
Total Expenses (2)				9,476	9,053
PRIMARY BENEFIT (4) = (1) - (2)				9,424	7,257
CASH BALANCE (5) = (4) + (3)				11,692	8,958

Table E5.1 Crop Production Budget per Acre (18/20) with Project

Sugarcane, Ratoon (Irrigated)

Îtem	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	17,600	0.9	15,840	13,670
By-product Credit	kg				
Total Revenue (1)				15,840	13,670
EXPENSES					te i te transce
Materials					
Seed	kg	3,000	1.08	3,240	3,240
Fertilizer					
N	kg	60	15.0	900	1,323
P	kg	40	20.0	800	912
K	kg	25	18.0	450	329
Plant Protection					0
Labours					
(Hired Labour)					
Planting (Sowing)	md			0	0
Fertilizer Application	md			0	0
Plant Protection	md			0	0
Weeding	md			0	0
Irrigation / Cleaning	md			0	0
Harvesting / Grading / Packing	md	5.5	72.0	396	297
Subtotal	md	5.5	72.0	396	297
(Family Labour)		J.,	, 2.0		
Planting (Sowing)	md			0	0
Fertilizer Application	md	3.0	72.0	216	162
Plant Protection	nid	5.0		0	0
Weeding	md	11	72.0	792	594
Irrigation / Cleaning	md	7	72.0	504	378
Harvesting / Grading / Packing	md	5.5	72.0	396	297
Subtotal (3)	md	26.5		1,908	1,431
(Total Labour Requirement)	md	32			-,,,-
Others				N	
Land Praparation (Tractor)	no			0	0
Eand Haparation (Hactor)	- 110				
Sowing (Tractor)	nora			0	0
Credit	acte			150	150
Contingencies	acre			392	384
Comingencies	acre			392	304
Total Expenses (2)				8,236	8,066
PRIMARY BENEFIT (4) = (1) - (2)				7,604	5,604
CASH BALANCE (5) = $(4) + (3)$	1 4 4 4			9,512	7,035
Charles (3) = (4) T (3)				3,51 6	1,000
	L _ :	L			

Table E5.1 Crop Production Budget per Acre (19/20) with Project

Orchards (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acre
REVENUE					
Main Crop	kg	6,002	7.0	42,014	36,426
By-product Credit	kg				
Total Revenue (1)				42,014	36,426
EXPENSES					
Materials					
Seed	no	100	45.0	4,500	4,500
Fertilizer					
N	kg	64	15.0	960	1,411
P	kg	40	20.0	800	912
K	kg	25	18.0	450	329
Plant Protection	no	3	310.0	930	930
Labours					
(Hired Labour)					
Planting (Sowing)	md			0	0
Fertilizer Application	md			0	0
Plant Protection	md	3	72.0	216	162
Weeding /Hoeing	md	3.5	72.0	252	189
Irrigation / Cleaning	md	5	72.0	360	270
Harvesting / Grading / Packing	md	23	72.0	1,656	1,242
Subtotal	md	34.5		2,484	1,863
(Family Labour)					
Planting (Sowing)	md			0	0
Fertilizer Application	md	2.5	72.0	180	135
Plant Protection	md			0	0
Weeding /Hoeing	md			0	0
Irrigation / Cleaning	md	5	72.0	360	270
Harvesting / Grading / Packing	md	4	72.0	288	216
Subtotal (3)	md	11.5		828	621
(Total Labour Requirement)	md	46.0			
Others					
Land Praparation (Tractor)	по	2	75.0	150	131
Sowing (Tractor)	no			0	0
Credit	acre			0	0
Contingencies	acre			555	535
Total Expenses (2)		[11,657	11,231
PRIMARY BENEFIT $(4) = (1) - (2)$				30,357	25,195
CASH BALANCE $(5) = (4) + (3)$				31,185	25,816
				Maria Para	

Table E5.1 Crop Production Budget per Acre (20/20) with Project

Onion (Irrigated)

Item	Unit	Quantity	Unit Price	Financial Value	Economic Value
		Unit/Acre	RS/Unit	RS/Acre	RS/Acr
<u>REVENUE</u>					
Main Crop	kg	5,000	6.2	31,000	26,970
By-product Credit	kg	ŕ			
Total Revenue (1)	6			31,000	26,970
EXPENSES					
Materials					
Seed	kg	5	37.0	185	185
Fertilizer	-6				
N	ka	52	15.0	780	1,147
P P	kg ka	25	20.0	500	570
	kg	18	18.0	324	23
K	kg			620	620
Plant Protection	по	2	310.0	620	020
Labours					
(Hired Labour)					
Planting (Sowing)	md	4	72.0	288	21
Fertilizer Application	md	3	72.0	216	16
Plant Protection	md	2	72.0	144	10
Weeding	md	10	72.0	720	54
Irrigation / Cleaning	md	4	72.0	288	21
Harvesting / Grading / Packing	mđ	13	72.0	936	70
Subtotal	md	36		2,592	1,94
(Family Labour)					
Planting (Sowing)	md	4	72.0	288	21
Fertilizer Application	md	_	72.0	0	
Plant Protection	md		72.0	0	
and the second of the second o	md		72.0	Ö	
Weeding	md	3	72.0	216	16
Irrigation / Cleaning	1.50		72.0	360	10. 27(
Harvesting / Grading / Packing	md	5	12.0	and the second of the second o	the second of the second
Subtotal (3)	md	12		864	64
(Total Labour Requirement)	md	48.0			
Others					
Land Praparation (Tractor)	กด	6	75.0	450	39.
Sowing (Tractor)	no	3	75.0	225	19
Credit	acre			150	150
Contingencies	acre			335	30
Total Expenses (2)				6,800	6,19
PRIMARY BENEFIT $(4) = (1) \cdot (2)$				24,201	20,77
CASH BALANCE (5) = $(4) + (3)$		10.00	11000	25,065	21,422

Table E5.2 Agricultural Benefits in Financial Price (1/2)

	:	Without Project			With Project	
Crop	Area	Unit Value	Total Benefit	Area	Unit Value	Total Benefi
	(acres)	(Rs/acre)	(1000Rs)	(acres)	(Rs/acre)	(1000Rs)
(Kharif)			ļ			
Maize	257	796	204	4,076	2,067	8,424
		3				
Tobacco				755	33,958	25,630
				·		
K.Vegetables				1,208	19,533	23,588
Pulses				604	4,200	2,536
						·
K.Fodder				453	4,933	2,234
			•			
Sugarcane	5 5 11			4,529	7,604	34,435
Bugareano						
Orchard	1:			1,208	30,357	36,659
Olemana						
Subtotal	257		204	12,831		133,506
Guototai						
(Rabi)		¥ -				
Wheat	7,698	1,769	13,619	4,529	5,803	26,279
Wilcat	7,050	1,705	10,017	1,020	3,000	
Oilseeds	151	556	84	302	2,132	644
Offsecus	131	230		: 502	2,102	
Onion			4.5	906	24,201	21,919
Onton				200	24,201	21,717
D Massachian				1,057	15,701	16,590
R.Vegetables				1,057	15,701	10,550
D P. 11-				453	5,202	2,356
R. Fodder				455	3,202	2,550
				0	8,970	0
Sugarbeet				J	0,270	· ·
	610	1.527	945	0	2,023	0
Barley	619	1,527	943	U	2,02.5	Ŭ
0) · · · · ·
(Sugarcane)					. The second of	
(Orchards)						
	0.470		14.740	7046		67,788
Subtotal	8,468		14,648	7,246		_
Annual	8,725		14,852	20,076		201,293
						106 440
Net Project Benefit						186,442
			and the second			

Table E5.2 Agricultural Benefits in Financial Price (2/2)

		Without Project	et		With Project	e Total Benefit (1000Rs) 7 8,424 8 25,630 3 23,588 0 2,536 3 2,234 4 42,677 7 36,659 141,748 3 26,279 2 644 1 21,919 1 16,590 2 2,356 0 0 3 0		
Crop	Area	Unit Value	Total Benefit	Arca	Unit Value	Total Benefit		
<u>anamentaria errapportugu er upp e</u> episportuga di Alfreda diki adda adalar episportu	(acres)	(Rs/acre)	(1000Rs)	(acres)	(Rs/acre)	(1000Rs)		
(Kharif)	. 1.							
Maize	257	796	204	4,076	2,067	8,424		
	*.							
Tobacco				755	33,958	25,630		
		1						
K.Vegetables		1		1,208	19,533	23,588		
	4	. :				4.4		
Pulses				604	4,200	2,536		
K.Fodder				453	4,933	2,234		
Sugarcane				4,529	9,424	42,677		
Orchard				1,208	30,357	36,659		
				-,				
Subtotal	257		204	12,831		141,748		
				,				
(Rabi)						Ì		
Wheat	7,698	1,769	13,619	4,529	5,803	26,279		
meat	7,020	1,70>	10,015	,,525	5,005	20,27		
Oilseeds	151	556	84	302	2,132	644		
Onseeds	• •	330	Ŭ.	302	2,102			
Onion				906	24,201	21 919		
Onton				,,,,	D1,201	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
R.Vegetables				1,057	15,701	16 590		
K. Vegetables		100		1,057	15,701	10,550		
R. Fodder				453	5,202	2356		
K. Fodder				133	3,202	2,550		
Sugarbeet				0	8,970	۸ ا		
Sugarocci	A Harris			, , ,	0,270	ľ		
	619	1,527	945	0	2,023	٨		
	019	1,527	243	, v	2,023	"		
(Cu)								
(Sugarcane)								
(Orchards)								
Cultistal	0.420		1/ 240	7746		62 200		
Subtotal	8,468		14,648	7,246				
Annual	8,725		14,852	20,076		209,535		
						101.50		
Net Project Benefit						194,684		
			1 San 1 San 1	ET SECTION				

Table E5.3 Agricultural Benefits in Economic Price (1/2)

	1	Vithout Projec	t	+	With Project	
Crop	Area	Unit Value	Total Benefit	Area	Unit Value	Total Benefit
,	(acres)	(Rs/acre)	(1000Rs)	(acres)	(Rs/acre)	(1000Rs)
(Kharif)		graat e	-			
Maize	257	736	189	4,076	1,592	6,488
Tobacco				755	28,988	21,879
Tobacco				·	,	
77.17				1,208	16,714	20,184
K.Vegetables				1,200	10,711	20,10
				604	2.326	2,069
Pulses			1 20	004	3,426	2,009
				1_1	/	
K.Fodder		1.		453	4,026	1,823
		Terminal section of the section of t	lant se			
Sugarcane				4,529	5,604	25,378
		3.74				
Orchard				1,208	25,195	30,425
Oremana						
Subtotal	257		189	12,831		108,246
Subtotal	2.57		10,	12,001		
(Rabi)		4 000	10.737	4.520	4,465	20,220
Wheat	7,698	1,392	10,716	4,529	4,403	20,220
				202	4	470
Oilseeds	151	319	48	302	1,558	470
Onion				906	20,774	18,815
		1 1 4 4 1 1 T				
R.Vegetables				1,057	13,379	14,137

R. Fodder				453	4,400	1,993
K. Poddei						
0				0	7,456	0
Sugarbeet						
	610	1240	829	0	1,708	0
Barley	619	1,340	029	U	1,700	
(Sugarcane)						
(Orchards)						
Subtotal	8,468		11,594	7,246		55,635
Annual	8,725		11,783	20,076		163,881
Net Project Benefit						152,098

Table E5.3 Agricultural Benefits in Economic Price (2/2)

	1	Without Projec	1		With Project	
Crop	Area	Unit Value	Total Benefit	Area	Unit Value	Total Benefi (1000Rs)
	(acres)	(Rs/acre)	(1000Rs)	(acres)	(Rs/acre)	(1000KS)
(Kharif)					4 500	ć 400
Maize	257	736	189	4,076	1,592	6,488
			1	* .		
Tobacco				755	28,988	21,879
		:		-	14	
K.Vegetables				1,208	16,714	20,184
				-		
Pulses			. 5	604	3,426	2,069
		,			4 4 4	
K.Fodder				453	4,026	1,823
Sugarcane				4,529	7,257	32,863
oug						
Orchard				1,208	25,195	30,425
Olemana						
Subtotal	257		189	12,831		115,732
Subtotal	23,		105	12,001		
(Rabi)					1.0	
Wheat	7,698	1,392	10,716	4,529	4,465	20,220
wheat	7,030	1,372	10,710	1,525	1,103	20,220
0.11-	151	319	48	302	1,558	470
Oilseeds	131	319	40	30Z	1,556	7,0
				906	20,774	18,815
Onion		1		900	20,774	10,013
		*		1.057	12 220	14 127
R.Vegetables				1,057	13,379	14,137
				450	4.400	4.000
R. Fodder				453	4,400	1,993
Sugarbeet	1200			0	7,456	0
	*					
Barley	619	1,340	829	0	1,708	C
(Sugarcane)						
(Orchards)						
Subtotal	8,468		11,594	7,246		55,635
Annual	8,725		11,783	20,076		171,366
Net Project Benefit						159,584

Table E5.4 Farm Budget in Financial Prices (1/3)

Small Farmer

(Average Farm Size: 3.5 acre)

		Without			With	
Стор	Area	Unit Value	Income	Area	Unit Value	Income
O.O.	(acres)	(Rs/acre)	(Rs)	(acrse)	(Rs/acre)	(Rs)
(Kharif)						1. 1
Maize	0.06	796	47	0.95	2,067	1,953
	(1.7%)			(27%)		
Tobacco	(-1117)			0.21	33,958	7,131
Tobacco				(6%)	:	
K.Vegetables				0.28	19,533	5,469
K. vegetables				(8%)	17,555	3,.07
D.J.	7-7-	F		0.14	4,200	588
Pulses		1		i	4,200	300
				(4%) 0.11	4.022	518
K.Fodder		a i		1 3	4,933	310
				(3%)	0.404	0.000
Sugarcane				1.05	9,424	9,895
			* .	(30%)		
Orchard				0.28	30,357	8,500
				(8%)	:	
Subtotal	0.06	F4 - 11 Te	47	3.01		34,055
(Rabi)						
Wheat	1.79	1,769	3,158	1.05	5,803	6,093
and the Lagran	(51.0%)			(30%)		
Oilseed	0.04	556	19	0.07	2,132	149
	(1.0%)		N.	(2%)		
Onion	(2.0.0)			0.21	24,201	5,082
Omon				(6%)		
R.Vegetables			9. 7	0.25	15,701	3,847
K. Vegetaules				(7%)		•,•
R. Fodder				0.11	5,202	546
K. Podder				(3%)	3,202	5.0
				0.00	8,970	0
Sugarbeet					0,510	U
		1.500	210	(0%)	2.022	0
Barley	0.14	1,527	219	0.00	2,023	U
	(4.1%)					
(Sugarcane)						
(Orchards)				- ,		
Subtotal	1.96		3,396	1.68		15,718
Annual	2.02		3,444	4.69		49,772
Incremental Income						46,329
	3- 1433		With the first		1 * .*	

Note: 1 Sugarcane and Orchard (Fruits trees) occupy the cropped area through a year.

² Family labour cost (Non-cash cost) is excluded from the cost of farm inputs.

Table E5.4 Farm Budget in Financial Prices (2/3)

Average Farmer

(Average Farm Size: 4.4 acre)

		Without			With	
Crop	Area	Unit Value	Income	Area	Unit Value	Income
	(acres)	(Rs/acre)	(Rs)	(acrse)	(Rs/acre)	(Rs)
(Kharif)						
Maize	0.07	796	60	1.19	2,067	2,456
	(1.7%)			(27%)		100
Tobacco	`	111	* * * * * * * * * * * * * * * * * * * *	0.26	33,958	8,965
				(6%)	-	•
K.Vegetables				0.35	19,533	6,876
IXI / tgc/ac/co				(8%)	1.4	
Pulses				0.18	4,200	739
TOICE				(4%)		
K.Fodder		3.		0.13	4,933	651
IX.I Oddel			1.0	(3%)	,,,,,,	
Sugarcane	4.			1.32	9,424	12,440
Sugarcane	e e e e e e e e e e e e e e e e e e e			(30%)	,,	12,110
Orchard				0.35	30,357	10,686
Ofchaid				(8%)	30,337	10,000
0.11	0.07		60	3.78		42,812
Subtotal	0.07		60	3.10		42,012
~ • • •						
(Rabi)	204	1 7760	2.070	1.00	£ 002	7.660
Wheat	2.24	1,769	3,970	1.32	5,803	7,660
	(51.0%)			(30%)		400
Oilseed	0.04	556	24	0.09	2,132	188
	(1.0%)			(2%)		
Onion				0.26	24,201	6,389
				(6%)		
R.Vegetables				0.31	15,701	4,836
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		(7%)		
R. Fodder				0.13	5,202	687
				(3%)		
Sugarbeet				0.00	8,970	0
				(0%)		
Barley	0.18	1,527	275	0.00	2,023	0
	(4.1%)					
(Sugarcane)						
(Orchards)						1. 94
Subtotal	2.47		4,270	2.11		19,759
Annual	2.54		4,329	5.90		62,571
Incremental Income						58,242
L	<u> </u>		L			

² Family labour cost (Non-cash cost) is excluded from the cost of farm inputs.

Table E5.4 Farm Budget in Financial Prices (3/3)

Medium Farmer

(Average Farm Size: 16.6 acre)

		Without			With	
Сгор	Area	Unit Value	Income	Area	Unit Value	Income
	(acres)	(Rs/acre)	(Rs)	(acrse)	(Rs/acre)	(Rs)
(Kharit)						2 88 7
Maize	0.28	796	225	4.48	2,067	9,264
	(1.7%)			(27%)		
Tobacco			·	1.00	33,958	33,822
				(6%)		
K.Vegetables	* **			1.33	19,533	25,940
				(8%)		
Pulses				0.66	4,200	2,789
			1,5	(4%)		
K.Fodder				0.50	4,933	2,457
		100		(3%)		
Sugarcane				4.98	9,424	46,932
				(30%)		
Orchard		1.4		1.33	30,357	40,314
				(8%)		
Subtotal	0.28	144.13	225	14.28		161,517
(Rabi)						
Wheat	8.47	1,769	14,976	4.98	5,803	28,899
Wilcat	(51.0%)	1,,00	1.,,	(30%)		
Oilseed	0.17	556	92	0.33	2,132	708
Olisced	(1.0%)	330		(2%)	7	
Onion	(1.070)			1.00	24,201	24,104
Omon				(6%)		
R.Vegetables				1.16	15,701	18,245
K. vegetables				(7%)	10,.01	20,210
R. Fodder				0.50	5,202	2,591
K. Podder	1.0		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(3%)	5,202	-,,,,
				0.00	8,970	0
Sugarbeet				(0%)	0,210	•
n. t.	0.68	1 527	1,039	0.00	2,023	0
Barley		1,527	1,039	0.00	2,023	v
	(4.1%)					
(Sugarcane)						
(Orchards)						
	المدا		17 400	3.03		74,546
Subtotal	9.31		16,108	7.97		
Annual	9.59		16,333	22.24		236,063
Incremental Income						219,731
						<u> </u>

Note: 1 Sugarcane and Orchard (Fruits trees) occupy the cropped area through a year.

² Family labour cost (Non-cash cost) is excluded from the cost of farm inputs.

Table E5.5-1 Economic Crop Production Budget (Rs/Acre) for Maize

(1997 Flices)	Unit	Unit	Price		1		· · - · ·	Mon	thly Alloc	ation		·
Item		/acre	/ unit	Total	May	a/	Jun	Jul	Aug	Sep	Oct	Nov a/
						:						
REVENUE				4					N			
Main Crop	kg	650	6	3,900]		- 4.					3,900
By-product Credit	kg	1,300	0.12	156	ŀ				.:		ŀ	156
TOTAL REVENUE				4,056				:				4,056
								4 4				
EXPENSES			1	4 5								
Land Preparation	no	5	75	375		ŀ	188	188				
Seed: Input cost	kg	18	8	144				72	72			:
Sowing	acre	1	75	75			·	38	38			1
Fertilizer												
Urea, Nut	kg	30	15	450					225	. 225		
Application	nid	1.25	72	90				22	41	27		
Bird Searing for PP	nid	10	72	720						360	360	- 11
Harvesting	nid	6	72	432								432
Threshing	nid	4	72	288		.		5,	:			288
Credit	acre	- 1		37		ı	7	7	7	7	7	
Contingencies	acte	1		131			10	16	19	31	18	36
												1. F. S.
TOTAL EXPENSES		1. 1.1		2,742	~~	0	205	343	402	651	386	756
				A 11 A						34		
NET POTENTIAL FLOO	OD LOS	SES			1,3	14	1,314	1,519	1,862	2,264	2,914	3,300
	. *	1.5	100	1.								1.1

a/ : All months before June and after October

Note: Yield data collected through field investigation and agriculture department.

Table E5.5-2 Economic Crop Production Budget (Rs/Acre) for Kharif Fodder (Fresh)

(1997 Prices)

	Unit	Unit	Price				Mor	thly Alloca	ation	<u> </u>	se est e
Item		/ acre	/ unit	Total	May a/	Jun	Jul	Aug	Sep	Oct	Nov a/
		4 27									1.5
REVENUE	**				11						
Main Crop	mt	7.5	840	6,300		315	945	1,575	1,638	1,386	441
By-product Credit		0	100	0							0
TOTAL REVENUE		. **:		6,300		315	945	1,575	1,638	1,386	: 441
	1.0		4.7			16.00					
EXPENSES		2.75	100			1.1.			10.00		
Land Preparation	no	4	75	300	135	78	66	21	4,7		
Seed: Input cost	kg	25	12.6	315	142	82	69	22			
Sowing	no	1	75	75	33	(21	18	6		40.50	
Fertilizer						2.5		+ ¹ / ₂	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
P.Nut	kg	20	20	400	180	104	88	28		40.00	
Application	mđ	1.25	72	90	45	24	19	5			
Irrigation	md	3.5	72	252	71	71	19	71	19	1.4	
Harvesting	md	22	72	1,584		. 19	238	396	412	348	111
Credit	1.0	1.35,57	1 - 1	60	12	12	12	- 12	12	1.00	
Contingencies	асте	1	**	154	31	24	26	28	22	17	6
		100			1 × 1 × 1	1.50	100 May 1		1 July 1		1.5 Y
TOTAL EXPENSES		1.14		3,230	649	495	555	590	465	366	116
									300		14,700
NET POTENTIAL FLO	OD LOS	SES	at in the		3,070	3,719	4,214	4,770	5,360	5,825	6,191
	1010	$\mathcal{F}_{1} = \mathcal{F}_{1} \mathcal{F}$				• •		fair l	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	146.7	

a/ : All months before June and after October

Table E5.5-3 Economic Crop Production Budget (Rs/Acre) for Sugarcane, Plant Crop

	Unit	Unit	Price				Mor	thly Alloc	ation		
Item	·	/acre	/ unit	Total	May a/	Jun	Jul	Aug	Sep	Oct	Nov a
							[
REVENUE											;
Main Crop	mt	15.3	900	13,770							16,050
By-product Credit	mt	0	0	0	· :				ł		(
TOTAL REVENUE				13,770							16,050
									•		
EXPENSES											٠
Land Preparation	no	5	75	375		188	188				
Seed: Input cost	mt	3	1,080	3,240			1,620	1,620			
Fertilizer	4.5						,				•
Urea, Nut	kg	40	: 15	600				300	300		
Application	md	3	72	216			52	98	65		
Planting	md	8	72	576						1	
Weeding	md	13	72	936	• "					14.1	
Irrigation	md	7	72	504					252	252	
Harvesting	md	12	72	864			11				864
Credit	acre	1		150	60	15	15	15	15	15	1.5
Contingencies	acre	1		373	3	10	94	102	32	13	44
TOTAL EXPENSES				7,834	63	213	1,969	2,135	664	280	923
			1000	4 4		1 7					1200
NET POTENTIAL FLOO	D LOS	SES_	1		5,936	5,999	6,212	8,180	10,315	10,979	11,259
		1 2 1 1						3.5		1 1	<u> </u>

a/ : All months before June and after October

Note: Yield data collected through field investigation and agriculture department.

Table E5.5-4 Economic Crop Production Budget (Rs/Acrc) for Sugarcane, Ratoon Crop

(1997 Prices)

	Unit	Unit	Price				Mor	thly Alloc	ation	eder e	<u>. 12 _ 2 1</u>
Item	+ 1.	/acre	/ unit	Total	May a/	Jun	Jul	Aug	Sep	Oct	Nov a
									- · · · · ·		
REVENUE			. 1								
Main Crop	mt.	12.1	900	10,890			1				3,900
By-product Credit	mt	0		0							150
TOTAL REVENUE				10,890						250	4,050
							1.1				100
EXPENSES	175.3		1.00	1	1.14	1 1 1	1. "		1.1		
Fertilizer					15-	- 1	1.0	1.5			
Urea, Nut	kg	40	15	600		600					
Application	md	3	72	216	71	145				4, 75,	1 %
Weeding	md	10	72	720	- VI	540	180		360	360	
Irrigation	md	7	72	501	106	76	76	76	76	76	2
Harvesting	md	10	72	720		1. 1			1.5		720
Credit				330	132	32	32	32	32	32	32
Contingencies	acre	1		155	15	70	14	5	23	23	39
	. 1. 1	11 11 7		13	100	1.0		100	.5 -		7.50
TOTAL EXPENSES	5.20	1	10.0	3,245	325	1,462	302	113	491	491	816
	1.1.5					44		100			
NET POTENTIAL HLO	D LOS	SES			7,646	7,970	9,432	9,734	9,847	10,338	10,829
	V 414						1.0			+	B 4
Average for Planted and I	Patoon (Tenno (De	laire	100	1.2		J. 7		V 4	1.75	100

a/ : All months before June and after October

Table E5.5-5 Economic Crop Production Budget (Rs/Acre) for Pulse

	Unit	Unit	Price			Monthly Allocation					
Item		/acre	/ บกไ	Total	May a/	Jun	Jul	Aug	Sep	Oct	Nov a/
										·	1 1 1 1
REVENUE											
Main Crop	kg	248	21.2	5,258	'						5,258
By-product Credit	kg	0		0					٠.		- 0
TOTAL REVENUE				5,258							5,258
EXPENSES											
Land Preparation	no	3	. 75	225	113	113	:				100
Seed: Input cost	kg	8	27	216		216					
Sowing	no	1	75	75		75					7
Fertilizer						1.				i . '	2 T
P.Nut	kg	20	20	400		400	100				
Application	md	0.5	72	36		36					
PP cost	acre	. 1	310	310				310			
Harvesting	md	6	72	432						143	289
Threshing	md	8	72	576							570
Credit	acte	1		60	10	10	10	10	10	10	1 1
Contingencies	acre	1		117	6	42	1	16	1	8	4.
TOTAL EXPENSES				2,447	0	892	11	336	11	160	909
NET POTENTIAL FLO	OD LOS	SES			2,811	2,811	3,703	3,714	4,050	4,060	4,220

a/ : All months before June and after October

Note: Yield data collected through field investigation and agriculture department.

Table E5.5-6 Economic Crop Production Budget (Rs/Acre) for Vegetables

(1997 Prices)

8 - Krist # (5 - 4) (1 -	Unit	Unit	Price	200		1.5	Mor	thly Alloca	ation	2 Y 1	
Item		/ acre	/ unit	Total	May a/	Jun	Jul	Aug	Sep	Oct	Nov a/
REVENUE											
Main Crop	kg	2,613	5.5	14,372		1.5	9		1.7		3,900
By-product Credit	kg	0		0							156
TOTAL REVENUE				14,372							4,056
<u>EXPENSES</u>		1.60		F		. New J					
Land Preparation	по	. 8	75	600	240		}	360			
Seed: Input cost	kg	3	62	186	74	ys th		93	19		
Fertilizes	٠.										1.5
P. Nut	kg	14	20	280	98			140	42		1.8
N. Nut	kg	: 29	15	435		435					
K. Nut	kg	7	18	126	126				10 700	44.44	
Application	md	3	72	216	86			108	22	100	
Planting	· md	10	72	720	288	1212		360	72		3.42
Weeding	md	13	72	936	100	702	234				
Plant Protection Materials	acte	1	310	310		103	103	103			
Application	md	1.5	72	108		36	36	36	9 3 4 5 9 5 7 4 5	1.1	
Irrigation	md	7	72	504	101	76	76	76	76	76	25
Harvesting	md	20	72	1,440					* * *	A SUPERIOR	1,440
Credit				160	64	16	16	16	16	16	16
Contingencies	acre	1	1,44	301	54	68	23	65	12	5	74
TOTAL EXPENSES				6,322	0	1,436	488	1,357	258	96	1,555
NET POTENTIAL FLO	OD LO	SSES			8,049	8,049	9,486	9,974	11,330	11,589	11,685

a/ : All months before June and after October

Table E5.5-7 Economic Crop Production Budget (Rs/Acre) for Fruits

(1997 Prices)	Unit	Unit	Price		Monthly Allocation							
Item	Unit	/acre	/ unit	Total	May	a/	Jun	Jul	Aug	Sep	Oct	Nov 3/
REVENUE	-			5.] 		
Main Crop	kg	2,986	7.8	23,291							٠.	
By-product Credit	kg	0		, 0								
TOTAL REVENUE				23,291		. [·	-		
<u>EXPENSES</u>									1			5.7 5.
Fertilizer			**		l							
P. Nut	kg	15	20	300	1	- 1						
Urea, Nut	kg	30	15	450	•							
Application	md	4	72	288		7				1		1
Weeding/hoeing	md	14	72	1,008	1	.						
Plant Protection	acre	1	310	310		.					,	4
Materials			72	216	11.00	-				1.7		
Application	md md	3	72	1,224			1. 1. 1.					
Irrigation Harvesting/grading/p		40	72	2,880					1.4			
Contingencies	acre	1	· •	334			1,11		el el e			
Comingencies	acic			031								
TOTAL EXPENSES				7,010			-				1 21.	
						.	1.5	44.03				
NET POTENTIAL FLOO	D LOS	SES		16,281		- Į						
		1.							1			

Table E5.5-8 Flood Damage Estimation for the Flood Affected Project Area Concerned

CCA (%)	CROP		May	June	July	August
						• •
11.8	Maize	Yield Loss (%)	30	40	50	100
		Damages/acre crop (Rs)	1,314	1,314	1,519	1,862
		Damages/acre flooded (Rs)	47	62	90	220
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1				1.0	
1.2	Fodder	Yield Loss (%)	85	80	75	55
		Damages/acre crop (Rs)	3,070	3,719	4,214	4,770
		Damages/acre flooded (Rs)	31	36	38	31
46.6	Sugarcane	Yield Loss (%)	60	50	40	30
		Damages/acre crop (Rs)	6,791	6,985	7,822	8,957
		Damages/acre flooded (Rs)	1,899	1,628	1,458	1,252
0.2	Orchards	Yield Loss (%)	100	100	100	100
		Damages/acre crop (Rs)	16,281	16,281	16,281	16,281
*		Damages/acre flooded (Rs)	33	33	33	33
						en de la companya de La companya de la co
0.93	Vegetables	Yield Loss (%)	100	100	100	100
	"	Damages/acre crop (Rs)	8,049	8,049	9,486	9,97
100		Damages/acre flooded (Rs)	75	75	88	9,
0.9	Pulses	Yield Loss (%)	100	100	100	100
		Damages/acre crop (Rs)	2,811	2,811	3,703	3,714
		Damages/acre flooded (Rs)	25	25	33	33
V.,					* * * * * * * * * * * * * * * * * * *	
					1 44,534	
Total Dama	ges/acre floo	ded/month (Rs)	2,109	1,858	1,740	1,662
	hted Damage		232	483	765	316

Notes:

- 1 Yield loss estimates by crop by month reflect estimates derived for each crop according to flood depth over 3 feet and 10 days runoff period.
- 2 Damages/acre reflect net potential flood loss estimates by crop by month as detailed in Table-where yield loss is not total, damages reflect net loss in income (losses in gross revenue less saving in harvesting, transport, marketing and artisans).
- 3 Estimates are weighted according to cropping pattern within the flooded area.
- 4 Total damages/acre flooded are a summation of individual crop damages.
- 5 Total weighted damages reflect the probability of the flood occurring in May (0.11), June (0.26) July (0.44), August (0.19) within this reach.

Table E5.6 Unit Prices of Farm Inputs and Outputs

Item	Unit	Farmgate Price	Conversion Factor	Economic Price	Remarks
Curre		(Financial)	ractor	FILE	<u> </u>
Crops Maize	l la	7.00	0.87	6.09	
Tobacco	kg kg	41.00	0.863	35.38	
Khalif Fodder	nt	840	0.87	730.80	
Khalif Vegetables	kg	5.50	0.87	4.79	
Pulses	kg	21.20	0.862	18.27	•
Sugarcane	kg	0.90	0.863	0.78	
Fruits		7.80	0.867	6.76	
Wheat	kg kg	7.50	0.863	6.47	
		1.10	0.87	0.96	
Sugarbeet Rabi Fodder	kg	0.57	0.87	0.50	
	kg ka	3.00	0.87	2.61	
Rabi Vegetables	kg	6.20	0.87	5.39	
Onion	kg	11.46	0.863	9.89	
Oilseed	kg	7.00	0.86	6.02	
Barley Maize straw	kg	0.12	0.87	0.02	
	kg	0.12	0.863	0.15	
Wheat straw	kg	0.40	0.603	0.33	
Farm Inputs				A.	
(Seed/Seedling)		9.00		8.00	
Maize	kg	8.00		320.00	
Tobacco	g	320.00	1	12.60	
Khalif Fodder	kg	12.60	1		
Khalif Vegetables	kg	62.00	1	62.00	
Pulses	kg	27.00		27.00 1.08	
Sugarcane	kg	1.08		1	
Fruits	no	45.00		45.00	
Wheat	kg	11.80	1	11.80	
Sugarbeet	kg	15.00	1	15.00	
Rabi Fodder	kg	27.00	1	27.00	
Rabi Vegetables	kg	37.00	1	37.00 13.58	
Oilseed	kg	13.58	1	11.00	
Barley	kg	11.00	1	1	
(Fertilizer Nutrient)	- 1 6	15.00	1.49	0.00	
N	kg	15.00	1.47	21.27	
P	kg	20.00	1.14	22.37	
K	kg	18.00	0.73	13.05	
(Agro-chemicals)		242.02		0.00	
Insecticide		310.00	1 l	310.00	
(Pesticide)		-0.0-		F100	
(Labour)		72.00	0.75	54.00	
(Machinery)	асте	75.00	0.87	65.25	
	(hour)			0.00	