

Year	Month	Catipyn. Dischg. MCM	Rain/ Evg. MCM	Irrigation Divergn MCM	Irrigation Deficit MCM	Power Release MCM	Domestic Release MCM	Spill- Out MCM	Reser- voir MCM	Usable for Power CMS	Power Dischg. CMS	Dam Head m	Site Output MWh	Station Energy MWh	Canal Output MWh	Station Energy MWh
1975	Jan.	2.0437	-0.0741	0.0114	0.0000	0.0000	0.0000	1.9790	27.9000	2.2796	32.5000	473.069	113.536	553.221	132.773	132.773
	Feb.	0.7976	-0.0754	0.0016	0.0000	0.0000	0.0000	3.7106	27.9000	0.8243	32.5000	136.242	32.698	162.372	38.495	38.495
	Mar.	0.5737	-0.0779	0.0000	0.0000	0.0000	0.0000	0.4958	27.9000	0.5739	32.5000	0.0000	0.0000	0.0000	0.0000	0.0000
	Apr.	0.4066	-0.0798	0.0000	0.0000	0.0000	0.0000	0.3085	27.9000	0.3571	32.5000	0.0000	0.0000	0.0000	0.0000	0.0000
	May	0.3102	-0.0887	1.8937	0.0000	0.0000	0.0000	0.0000	24.2778	2.1918	31.9174	445.965	107.037	532.242	127.738	127.738
	Jun.	0.9533	-0.0725	2.4443	0.0000	0.0000	0.0000	0.0000	26.7027	2.5199	32.0425	523.995	125.759	618.880	148.531	148.531
	Jul.	0.5345	-0.0494	2.9217	0.0000	0.0000	0.0000	0.0000	25.0537	2.4467	31.1455	604.306	145.033	728.114	174.747	174.747
	Aug.	0.8334	0.0006	0.8530	0.0000	0.0000	0.0000	0.0000	25.9043	0.9873	0.9873	31.1682	169.101	40.584	209.940	50.386
	Sep.	0.3982	0.1300	0.0000	0.0000	0.0000	0.0000	3.9283	27.9000	4.1894	3.0000	31.9516	630.099	151.274	741.030	177.847
	Oct.	0.1414	-0.0493	2.9184	0.0000	0.0000	0.0000	0.0000	24.3635	3.2620	30.8941	610.378	146.491	741.030	177.847	177.847
	Nov.	0.8000	-0.0138	1.9661	0.0000	0.0000	0.0000	0.0000	24.8838	4.1598	30.0314	412.632	99.072	524.800	125.952	125.952
	Dec.	0.7251	0.0013	0.0000	0.0000	0.0000	0.0000	2.7465	27.9000	3.7899	3.0000	48.5000	644.012	154.563	741.030	177.847
1976	Jan.	67.6639	0.6728	29.0699	0.0000	0.0000	0.0000	39.2669	27.0033	2.1610	1.7478	31.9194	354.8233	118.770	420.8913	3697.100
1977	Jan.	1.5464	-0.0484	0.0085	0.0000	0.0000	0.0000	1.4899	27.9000	1.7337	32.5000	548.478	83.635	911.207	98.690	98.690
	Feb.	1.1207	-0.0271	0.0098	0.0000	0.0000	0.0000	1.0901	27.9000	1.2731	32.5000	456.238	86.697	780.323	87.477	87.477
	Mar.	0.8912	-0.0104	0.0000	0.0000	0.0000	0.0000	0.7897	27.9000	0.9141	32.5000	158.448	38.079	188.504	45.265	45.265
	Apr.	0.6336	-0.0772	0.0000	0.0000	0.0000	0.0000	0.3564	27.9000	0.3555	32.5000	0.0000	0.0000	0.0000	0.0000	0.0000
	May	0.3408	-0.0907	2.0463	0.0000	0.0000	0.0000	0.0000	26.1643	2.3684	31.9006	494.343	119.643	578.712	129.413	129.413
	Jun.	1.2463	0.0680	3.3230	0.0000	0.0000	0.0000	0.0000	24.2387	3.8450	3.0000	28.5536	561.968	134.348	741.030	177.847
	Jul.	0.9007	0.0613	0.8094	0.0000	0.0000	0.0000	0.0000	24.9409	0.9244	0.9244	31.2419	155.064	37.215	192.136	46.113
	Aug.	0.3673	0.2297	0.8130	0.0000	0.0000	0.0000	1.8538	27.9000	1.8505	3.0000	31.1044	132.781	152.597	741.030	177.847
	Sep.	0.1179	-0.0203	0.0027	0.0000	0.0000	0.0000	3.3190	27.9000	3.8445	3.0000	32.5000	644.012	154.563	741.030	177.847
	Oct.	0.8075	0.0731	1.5974	0.0000	0.0000	0.0000	0.9812	27.9000	1.9428	1.9428	32.2750	396.473	95.154	469.728	112.735
	Nov.	0.8425	-0.0330	2.4437	0.0000	0.0000	0.0000	0.0000	24.4992	2.8293	3.0000	29.8450	572.912	130.382	684.629	164.311
	Dec.	0.9410	-0.0256	1.9510	0.0000	0.0000	0.0000	0.0000	23.1759	2.1424	2.1424	29.9543	408.379	98.011	461.294	124.978

	Discn.	Evap.	Irrigation	Derivat.	Release	Release	Out.	Vol.	for power	Discn.	Head	Output	Energy	Output	Energy
	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	M	MWH	MWh	MWh	MWh
Jan.	0.3933	-0.0856	1.2060	0.0000	0.0000	0.0000	22.0436	2.2060	2.2060	29.4143	412.454	98.909	535.595	129.530	530.774
Feb.	0.4954	-0.0530	0.0015	0.0000	0.0000	0.0000	22.3405	0.0017	0.0000	29.0760	0.000	0.000	0.000	0.000	0.000
Mar.	0.3521	-0.0885	0.0000	0.0000	0.0000	0.0000	23.3963	0.0000	0.0000	29.7311	0.000	0.000	0.000	0.000	0.000
Apr.	0.3933	-0.0856	1.2060	0.0000	0.0000	0.0000	22.0436	2.2060	2.2060	29.4143	412.454	98.909	535.595	129.530	530.774
May	0.2330	-0.0910	2.2727	0.0000	0.0000	0.0000	27.9011	2.4305	2.4305	30.1027	515.431	123.704	648.240	155.579	609.934
Jun.	0.4072	-0.0392	4.6273	0.0000	0.0000	0.0000	16.1455	5.3557	3.0000	26.6902	523.080	125.539	741.030	177.847	89.903
Jul.	0.2998	-0.0929	1.7368	0.0000	0.0000	0.0000	31.5160	2.0101	2.0101	28.9821	368.801	88.512	487.783	117.058	72.134
Aug.	0.1519	-0.3066	0.0000	0.0000	0.0000	0.0000	25.7491	0.0000	0.0000	30.8160	0.000	0.000	0.000	0.000	0.000
Sep.	0.8228	-0.0087	0.0103	0.0000	0.0000	0.0000	1.8212	27.9000	2.1198	32.5000	439.510	105.482	515.477	123.719	473.715
Oct.	0.9892	-0.0595	4.6534	0.0000	0.0000	0.0000	26.1931	1.9159	1.9159	31.2177	377.953	90.493	482.475	118.994	119.514
Nov.	0.4417	-0.0549	3.8771	0.0000	0.0000	0.0000	20.8184	4.5105	3.0000	29.2503	576.370	138.329	741.030	177.847	89.903
Dec.	0.4693	-0.0322	3.2834	0.0000	0.0000	0.0000	12.7225	3.9005	3.9005	23.9435	445.904	111.817	741.030	177.847	89.903
1982	47.7281	-0.0921	52.5199	0.0000	0.0000	0.0000	11.1551	22.0345	2.0191	29.0217	300.8252	305.220	400.7563	510.520	120.970

	Discn.	Evap.	Irrigation	Derivat.	Release	Release	Spill	Reser-	Usable	Power	Dam	Site	Station	Canal	R.Station
	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	M	MWH	MWh	MWh	MWh
Jan.	0.7277	-0.0017	0.0470	0.0000	0.0000	0.0000	7.9453	0.6149	1.2119	18.1411	123.139	29.551	268.333	63.930	73.930
Feb.	0.3834	-0.0324	0.0000	0.0000	0.0000	0.0000	7.9359	0.0020	0.0000	18.6875	0.000	0.000	0.000	0.000	0.000
Mar.	0.2647	-0.0472	0.0000	0.0000	0.0000	0.0000	8.5607	0.0000	0.0000	19.4387	0.000	0.000	0.000	0.000	0.000
Apr.	0.1872	-0.0510	0.0000	0.0000	0.0000	0.0000	9.1598	0.0000	0.0000	19.9300	0.000	0.000	0.000	0.000	0.000
May	0.1701	-0.0433	2.4514	0.0000	0.0000	0.0000	7.0775	2.8490	2.8490	19.1130	346.811	83.235	704.294	169.031	169.031
Jun.	0.3189	-0.0094	0.0251	0.0000	0.0000	0.0000	6.7000	0.3787	0.0000	17.6204	0.000	0.000	0.000	0.000	0.000
Jul.	0.7277	-0.0017	0.0470	0.0000	0.0000	0.0000	7.9453	0.6149	1.2119	18.1411	123.139	29.551	268.333	63.930	73.930
Aug.	0.2747	-0.0472	0.0000	0.0000	0.0000	0.0000	8.5607	0.0000	0.0000	19.4387	0.000	0.000	0.000	0.000	0.000
Sep.	0.8228	-0.0087	0.0103	0.0000	0.0000	0.0000	1.8212	27.9000	2.1198	32.5000	439.510	105.482	515.477	123.719	473.715
Oct.	0.9892	-0.0595	4.6534	0.0000	0.0000	0.0000	26.1931	1.9159	1.9159	31.2177	377.953	90.493	482.475	118.994	119.514
Nov.	0.4417	-0.0549	3.8771	0.0000	0.0000	0.0000	20.8184	4.5105	3.0000	29.2503	576.370	138.329	741.030	177.847	89.903
Dec.	0.4693	-0.0322	3.2834	0.0000	0.0000	0.0000	12.7225	3.9005	3.9005	23.9435	445.904	111.817	741.030	177.847	89.903
1983	71.7485	-1.4082	11.5427	0.0083	0.0000	0.0000	41.0849	17.7257	1.6689	1.2724	25.3682	253.0682	211.870	309.4372	110.570
20Year	72.2978	-1.0339	29.1152	0.2004	0.0000	0.0000	44.2054	25.0554	2.3234	1.7170	30.6956	342.4193	300.1870	415.3673	541.110

Year	Disc'n	Evap	Divergn	Deficit	Release	Release	Domestic	Spill-	Reser-	Usable	Power	Dam	Site	Station	Canal	R. Station
	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM
Jan.	0.9569	-0.0524	3.6509	0.0000	0.0000	0.0143	0.0000	0.0000	25.4724	4.7189	3.0000	31.6813	528.970	159.473	741.030	177.847
Feb.	0.7328	-0.0643	0.0015	0.0000	0.4561	0.0000	0.0000	0.0000	25.0000	0.7611	0.0000	30.6749	113.883	27.332	143.919	34.541
Mar.	0.4430	-0.0939	0.0000	0.0000	0.0000	0.0143	0.0000	0.0000	25.7051	0.0165	0.0000	30.9673	0.000	0.000	0.000	0.000
Apr.	0.2055	-0.0888	0.0000	0.0000	0.0000	0.0143	0.0000	0.0000	25.1477	0.0165	0.0000	31.4440	0.000	0.000	0.000	0.000
May	0.3773	-0.0757	1.7907	0.0000	0.8113	0.0000	0.0000	24.2010	3.0000	3.0000	30.8576	609.826	146.358	741.030	177.847	
Jun.	0.9995	-0.0031	2.9781	0.0000	0.0143	0.0000	0.0000	23.2524	3.4534	3.0000	30.2793	397.798	143.463	741.030	177.847	
Jul.	0.7749	-0.2013	0.1582	0.0000	2.0239	0.0143	0.0000	22.7743	3.0000	3.0000	29.8441	584.567	420.889	741.030	553.341	
Aug.	0.9879	-0.1317	0.0000	0.0000	2.5920	0.0000	0.0000	22.6473	3.0000	3.0000	29.2214	575.766	138.194	741.030	177.847	
Sep.	1.0020	-0.0323	0.0039	0.0000	0.0000	0.0143	0.0000	24.6111	0.0210	0.0000	30.0059	0.000	0.000	0.000	0.000	
Oct.	2.8729	-0.0529	1.4684	0.0000	1.1225	0.0000	0.0000	20.5137	3.0000	3.0000	31.4027	621.177	149.081	741.030	177.847	
Nov.	2.7509	-0.0777	0.4082	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	31.8147	0.000	0.000	0.000	0.000	
Dec.	1.2159	-0.0116	0.0000	0.0000	1.2000	0.0000	0.0000	27.0000	2.1300	3.0000	32.2845	639.526	153.486	741.030	177.847	
1964	66.5006	0.7811	24.7702	0.0000	29.5227	0.1725	14.9163	25.2409	2.1656	1.8936	30.8154	376.4673	306.980	461.2434	4051.560	

Year	Disc'n	Rain/	Irrigation	Irrigation	Power	Domestic	Spill-	Reser-	Usable	Power	Dam	Site	Station	Canal	R. Station
	MCM	Evap	Divergn	Deficit	Release	Release	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM
Jan.	0.7690	-0.0642	1.8242	0.0000	0.3805	0.0000	0.0000	25.5000	2.5518	2.5518	31.3436	519.446	124.667	627.341	150.562
Feb.	0.9470	-0.0138	0.8419	0.0000	0.0000	0.0143	0.0000	25.4771	0.9999	0.9999	30.9411	168.715	40.492	211.024	50.446
Mar.	0.7940	-0.0973	2.7502	0.0000	0.6579	0.0000	0.0143	25.4926	0.7806	0.7806	30.9411	119.438	31.532	149.602	36.495
Apr.	0.5705	-0.0604	0.0015	0.0000	1.1086	0.0000	0.0000	25.0000	1.2948	1.2948	30.9125	225.874	54.210	293.005	67.921
May	0.3716	-0.0823	0.0000	0.0000	0.0000	0.0143	0.0000	24.8383	0.0165	0.0165	30.9923	0.000	0.000	0.000	0.000
Jun.	0.5637	-0.1941	0.0015	0.0000	0.7527	0.0000	0.0143	24.9000	0.9277	0.9277	30.7925	190.801	30.302	232.986	49.714
Jul.	0.4557	-0.0732	0.0000	0.0000	0.0000	0.0143	0.0000	25.5683	0.0155	0.0155	30.7771	0.000	0.000	0.000	0.000
Aug.	0.3741	-0.0947	0.0000	0.0000	0.0000	0.0143	0.0000	24.6394	0.0155	0.0155	30.9492	0.000	0.000	0.000	0.000
Sep.	0.5295	-0.1267	0.0000	0.0000	2.0742	0.0000	0.0000	25.4670	0.7851	0.7851	30.9577	430.264	113.590	550.072	130.039
Oct.	0.3224	-0.0575	0.0000	0.0000	0.0000	0.0143	0.0000	25.2406	0.0155	0.0155	30.8967	152.674	113.590	168.990	139.939
Nov.	0.3785	-0.0999	0.0000	0.0000	0.0000	0.0143	0.0000	25.4589	0.0155	0.0155	31.5948	0.000	0.000	0.000	0.000
Dec.	0.3480	-0.3355	0.0000	0.0000	0.0000	0.0428	0.0000	24.1747	0.0155	0.0155	31.2115	0.000	0.000	0.000	0.000
1965	63.9067	6.5254	31.6235	0.0000	28.8549	0.2153	3.9385	23.5549	2.0431	1.9468	29.8674	369.9813	3241.030	474.7744	4519.020

	Discharge MCM	Evap. MCM	Divergen MCM	Deficit MCM	Release MCM	Release MCM	Domestic MCM	Spill- Out MCM	Reser- voir MCM	Usable for CNS MCM	Power Disch. MCM	Dam Head m	Site Output kW	Station Energy MWh	Canal Output kW	Station Energy MWh
Jan.	1.15275	0.0016	0.0178	0.0000	2.5792	0.0000	0.0000	25.2640	3.0000	3.0000	31.3607	420.000	148.871	741.030	177.847	
Feb.	3.19886	0.0454	0.0005	0.0000	3.7381	0.0000	0.0000	25.3206	1.7518	0.0000	31.7818	30.000	432.512	247.463	404.470	300.926
Mar.	0.49330	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	30.7818	0.000	0.000	0.000	0.000	0.000
Apr.	0.3118	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	31.0610	0.000	0.000	0.000	0.000	0.000
May	0.2433	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	31.0610	0.000	0.000	0.000	0.000	0.000
Jun.	1.80006	0.0000	1.9081	0.0000	0.0515	0.0000	0.0000	29.1485	3.0000	3.0000	31.4461	642.000	154.144	741.030	177.847	
Jul.	2.24973	0.1354	0.5295	0.0000	0.2057	0.0000	0.0000	27.9943	3.0000	3.0000	32.3767	641.445	153.947	741.030	177.847	
Aug.	2.15560	0.0193	0.0000	0.0000	0.4553	0.0000	0.0000	27.7447	3.0000	3.0000	32.3127	640.000	153.477	741.030	177.847	
Sep.	2.9175	0.0655	0.0054	0.0000	2.0000	0.0000	0.0000	26.2754	3.0000	3.0000	31.1677	544.864	149.291	741.030	177.847	
Oct.	1.7980	0.0858	1.7358	0.0000	0.9562	0.0000	0.0000	26.4598	3.0000	3.0000	31.4448	622.047	149.291	741.030	177.847	
Nov.	1.3968	0.0539	1.8334	0.0000	0.0000	0.0143	0.0000	26.2471	2.1384	3.0000	31.3963	427.810	102.674	519.924	124.758	
Dec.	3.2357	0.0071	0.0000	0.0000	1.1922	0.0000	0.0000	27.9079	3.0000	3.0000	32.1220	536.145	154.565	741.030	177.847	
1966	71.9853	0.1631	18.2672	0.0000	21.5552	0.1140	32.5119	26.6114	2.3163	2.0587	31.3574	425.462	237.050	505.089	440.700	

	Discharge MCM	Rain Evap. MCM	Irrigation Divergen MCM	Irrigation Deficit MCM	Power Release MCM	Domestic Release MCM	Spill- Out MCM	Reser- voir MCM	Usable for CNS MCM	Power Disch. MCM	Dam Head m	Site Output kW	Station Energy MWh	Canal Output kW	Station Energy MWh
Jan.	2.1365	0.0613	0.2874	0.0000	1.5941	0.0000	0.7105	26.6059	3.0000	3.0000	31.6569	426.047	150.251	741.030	177.847
Feb.	6.6581	0.1313	0.3038	0.0000	5.5070	0.0000	2.2244	26.3445	3.0000	3.0000	31.5097	623.399	146.809	741.030	195.832
Mar.	0.7192	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	30.8554	0.000	0.000	0.000	0.000
Apr.	0.3253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	31.2063	0.000	0.000	0.000	0.000
May	0.3139	0.0000	2.1709	0.0000	0.4211	0.0000	0.0000	23.6407	3.0000	3.0000	30.5727	603.895	144.935	741.030	177.847
Jun.	3.4061	0.1353	3.2756	0.0000	0.0000	0.0143	0.0000	20.0171	3.0000	3.0000	27.7383	544.894	130.775	741.030	177.847
Jul.	5.1715	0.0884	0.5626	0.0000	2.0294	0.0000	0.0000	20.9100	3.0000	3.0000	28.5917	558.498	146.489	741.030	195.832
Aug.	4.9724	0.0737	0.0074	0.0000	2.8512	0.0000	0.0000	24.4196	3.0000	3.0000	28.1181	554.884	146.489	741.030	195.832
Sep.	12.3804	0.2715	0.8070	0.0000	7.2282	0.0000	0.0000	20.7660	3.0000	3.0000	28.0612	551.618	140.404	741.030	195.832
Oct.	2.5028	0.0755	0.9487	0.0000	1.5433	0.0000	0.0000	24.7308	3.0000	3.0000	30.5354	603.117	144.748	741.030	177.847
Nov.	3.5812	0.1616	0.4270	0.0000	0.0000	0.0000	0.0000	28.2000	2.4065	3.0000	31.9910	495.178	118.843	587.182	140.924
Dec.	0.8677	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.0000	0.0000	0.0000	30.7818	0.000	0.000	0.000	0.000
1967	69.0539	0.6811	34.1481	0.0000	33.5639	0.1753	7.5229	24.2493	2.3912	2.2695	30.2808	441.008	386.230	554.190	485.470

Year	Discg.	Rain/	Irrigation	Irrigation	Power	Domestic	Spill-	Reser-	Usable	Power	Dam	Site	Station	Canal	R.	Station
	MCM	Evap.	Diversn	Deficit	Release	Release	Out	voir	for Power	Dischg.	Head	Output	Energy	Output	Energy	Energy
	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	m	MW	MWh	MW	MWh	MWh
Jan.	0.5812	-0.0537	2.1930	0.0000	0.0000	0.0143	0.0000	19.6251	2.5547	2.5547	28.0932	463.920	111.341	628.102	150.746	41.995
Feb.	0.3257	-0.0553	0.0016	0.0000	0.0000	0.0143	0.0000	18.8526	0.0184	0.0000	27.0129	0.000	0.000	0.000	0.000	0.000
Mar.	0.3574	-0.0767	0.0000	0.0000	0.0000	0.0143	0.0000	19.7358	0.0163	0.0000	27.7398	0.000	0.000	0.000	0.000	0.000
Apr.	0.2537	-0.0845	0.0000	0.0000	0.0000	0.0143	0.0000	20.3545	0.0163	0.0000	27.9865	0.000	0.000	0.000	0.000	0.000
May	0.2519	-0.0710	2.2000	0.0000	0.0000	0.0143	0.0000	18.5577	2.5628	2.5628	27.5612	456.335	109.520	630.270	154.245	41.995
Jun.	0.8742	-0.0639	1.5099	0.0000	0.0122	0.0071	0.0000	11.5973	1.3486	1.3486	21.8805	167.986	40.317	299.084	71.780	17.947
Jul.	3.2718	-0.0762	0.1277	0.0000	0.0000	0.0143	0.0000	10.4864	0.1643	0.0000	19.4214	0.000	0.000	0.000	0.000	0.000
Aug.	8.0503	-0.1376	1.3903	0.0000	0.0000	0.0143	0.0000	12.2070	0.5356	0.4826	21.5447	50.873	37.850	87.888	65.240	17.947
Sep.	13.5475	-0.2795	0.0097	0.0000	8.0255	0.0000	0.0000	17.1990	3.0000	3.0000	25.3376	494.925	368.224	741.030	551.326	0.000
Oct.	5.1563	-0.0748	2.2961	0.0000	0.0000	0.0428	0.0000	21.7621	0.9023	0.7323	28.5706	136.157	98.033	177.815	128.027	17.947
Nov.	0.2980	-0.0499	3.1516	0.0000	0.0000	0.0143	0.0000	25.5765	3.6642	3.0000	31.5695	624.644	149.915	741.030	177.847	0.000
Dec.	2.7190	-0.1618	4.9390	0.0000	1.2000	0.0000	0.0000	25.4902	2.6130	2.6130	31.4476	432.440	103.982	555.719	156.373	17.947
1968	59.6703	0.1216	38.3088	0.0000	11.5203	0.3927	7.3849	19.3004	1.9217	1.5592	27.1019	273.6232	403.510	378.6833	326.150	0.000

Year	Discg.	Rain/	Irrigation	Irrigation	Power	Domestic	Spill-	Reser-	Usable	Power	Dam	Site	Station	Canal	R.	Station
	MCM	Evap.	Diversn	Deficit	Release	Release	Out	voir	for Power	Dischg.	Head	Output	Energy	Output	Energy	Energy
	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	MCM	m	MW	MWh	MW	MWh	MWh
Jan.	0.5191	-0.0171	1.9469	0.0000	0.0000	0.0143	0.0000	22.2300	2.1541	2.1541	29.4906	403.872	94.929	533.472	125.533	17.947
Feb.	0.5769	-0.0177	0.0017	0.0000	0.0000	0.0143	0.0000	24.7701	0.0195	0.0000	28.7982	0.000	0.000	0.000	0.000	0.000
Mar.	0.4247	-0.0587	0.0000	0.0000	0.0000	0.0143	0.0000	22.9162	0.0165	0.0000	29.4250	0.000	0.000	0.000	0.000	0.000
Apr.	0.2574	-0.0533	0.0000	0.0000	0.0000	0.0143	0.0000	23.5291	0.0165	0.0000	29.8248	0.000	0.000	0.000	0.000	0.000
May	0.2114	-0.0777	2.2572	0.0000	0.0000	0.0143	0.0000	21.8260	2.6406	2.5406	29.3950	504.940	121.185	650.919	156.221	17.947
Jun.	4.6109	-0.1330	0.7519	0.0000	1.8401	0.0000	0.0000	21.8154	3.0000	3.0000	28.2547	555.646	133.355	741.030	177.847	0.000
Jul.	8.0670	-0.1582	0.4753	0.0000	2.147	0.0000	0.0000	19.3755	3.0000	3.0000	28.9344	528.162	126.759	741.030	177.847	0.000
Aug.	15.0146	-0.4319	0.4813	0.0000	7.5534	0.0000	0.0000	21.9124	3.0000	3.0000	28.4053	558.781	145.733	741.030	177.847	0.000
Sep.	2.6833	-0.1677	0.0000	0.0000	2.5920	0.0000	0.0000	22.7579	3.0000	3.0000	29.3073	577.555	138.613	741.030	177.847	0.000
Oct.	5.1538	-0.0889	7.2397	0.0000	2.9238	0.0157	0.0000	25.8532	3.0534	3.0000	29.3292	578.010	145.544	741.030	177.847	0.000
Nov.	0.7955	-0.0237	2.5394	0.0000	0.0000	0.0143	0.0000	19.7079	3.0702	2.5827	29.1124	487.496	116.999	635.547	152.531	17.947
Dec.	2.9700	-0.0304	5.3240	0.0000	0.0000	0.0143	0.0000	20.4915	2.1477	2.1477	28.3664	383.599	276.263	509.664	366.958	17.947
1969	56.9978	0.3058	34.0803	0.0000	22.1378	0.3464	0.0000	22.3240	1.7937	1.7449	29.1564	326.9662	464.220	425.7743	329.730	0.000

Year	Discng.	Head	Output	Energy	Output	Energy	Discng.	Head	Output	Energy	Output	Energy	Discng.	Head	Output	Energy	Output	Energy
	MCM	MCM	MCM	MWH	MCM	MWH	MCM	MCM	MCM	MWH	MCM	MWH	MCM	MCM	MCM	MWH	MCM	MWH
Jan.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dec.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
992	47.7281	-0.1315	46.9997	5.5293	10.4039	0.4534	0.0000	15.3798	1.8337	1.5786	24.8740	251.1122	199.740	394.9903	364.650			
993	0.7277	-0.0013	0.7058	0.3413	0.0000	0.0143	0.0000	6.8857	0.8334	0.3334	17.6048	17.3850	17.2474	154.890	39.374			
Jan.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Feb.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jul.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dec.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
993	71.7285	-0.2720	71.2564	16.9265	19.3801	0.3009	0.0000	22.9934	2.1571	1.7982	24.4714	252.204	229.530	342.277	306.220			

AGRONOMY

**CROP PRODUCTION COST AND RETURN FOR IRRIGATION
IN PADDY DIRECTSEEDED WITH 1ST CROPPING**

		Cost: Financial Base					
		Present		Without Project		With Project	
	Unit	Amount	Price	Price	Amount	Price	Price
			(%)	(%)		(%)	(%)
A. Variable Cost							
1. Man Labor ^{2/}	Man-Day	51.2	75% (31%)	4,329	73.1	6,484	74% (30%)
Nursery	-do-	-		1,623		2,614	
Repair Dike	-do-	2.0		30	2	30	
Seeding/Transplanting	-do-	1.0		15	1	15	
Weeding	-do-	18		270	18	270	
Fertilization	-do-	1		15	1.8	27	
Spraying	-do-	1		15	1.8	27	
Harvesting	Ratio	16.5		458	29.3	813	
Threshing	-do-	3.5		458	6.2	813	
Winnowing	-do-	2.4		275	4.3	488	
Hauling/Storage	Man-Day	2.6		39	4.6	69	
Water Management	-do-	2.0		30	2.0	30	
Drying	-do-	1.2		18	2.1	32	
2. Land Preparation				882		970	(17%)
3. Input Materials				1,431		1,574	(27%)
Seed	kg	180		477	150.3	567	
Fertilizer							
Urea	kg	50.7		252	127	630	
16-20-0	kg	14.4		64			
21-0-0	kg	9.5		26			
14-14-14	kg	72.6		335	214	989	
(Average N-P-K)	kg				87-30-30		
Agrochemicals							
Pesticide							
Liquid	l	1.30		212	3	492	
Granule	kg						
Herbicide							
Liquid	l	0.67		57	2	171	
Granule	kg	0.92		8			
B. Fixed Cost ^{1/}				1,299		1,429	25%
Land charge ^{4/}		33		611	35	2,269	26%
Others				688		1,085	
C. Total Production Cost (A + B)				5,235		5,758	100%
D. Gross Income	kg	2,590		2,849	4,600	12,190	
E. Net Income (D - C)				1,629		3,437	
F. Incremental Benefit						1,645	

1/: Ratios of Fixed cost to variable cost are estimated on the basis of the data of BAE can.
 2/: Man labor is only third labor, family labor is excluded.
 3/: Unit price is P 3.78/kg
 4/: Land charge for irrigated and rained is 8.9% and 16.9% of Gross Income respectively.

**CROP PRODUCTION COST AND RETURN FOR IRRIGATION
IN PADDY DIRECTSEEDED WITH 2ND CROPPING**

Cost: Financial Base									
	Unit	Unit Price	Present		Without Project		With Project		With Project (%)
			Amount	(%)	Price	Amount	Price	Amount	
A. Variable Cost									
1. Man Labor	Man-Day	P 15.00	41.4	75% (29%)	3,555	69.7	5,640	74% (30%)	
Nursery	-do-				1,351		2,706		
Repair Dike	-do-		1.2		18		18		
Seeding/Transplanting	-do-	P 15.00	0.8		12		24		
Weeding	-do-	P 15.00	13.7		206		206		
Fertilization	-do-	P 15.00	0.8		12		27		
Spraying	-do-	P 15.00	0.8		12		27		
Harvesting	Ratio		14.9		396		883		
Threshing	-do-	1/15	3.1		396		883		
Winnowing	-do-	1/25	2.0		237		530		
Hauling/Storage	Man-Day	P 15.00	1.5		23		75		
Water Management	-do-	P 15.00	1.6		24		0		
Drying	-do-	P 15.00	1.0		15		33		
2. Land Preparation				(18%)	865		1,001	(11%)	
3. Input Materials				(28%)	1,339		2,933	(33%)	
Seed	kg	P 2.65/kg	180		477		567		
Fertilizer									
Urea	kg	P 4.96/kg	45.8		227		714		
16-20-0	kg	P 4.44/kg	13.0		58				
21-0-0	kg	P 2.7/kg	8.6		23.1				
14-14-14	kg	P 4.62/kg	65.5		303		989		
(Average N-P-K)	kg	36-13-10					95-30-30		
Agrochemicals									
Pesticide									
Liquid	l	P 164/l	1.17		192		492		
Granule	kg	P 15.00/kg							
Herbicide									
Liquid	l	P 85.6/l	0.60		52		171		
Granule	kg	P 8.3/kg	0.83		7		2324	26%	
B. Fixed Cost				25%	1,173		1,290		
Land charge	P		33%		528		1,179		
Others					645		1,145		
C. Total Production Cost (A + B)				100%	4,728		5,201		100%
D. Gross Income	kg	P 2.65/kg	2,240		5,936		13,250		
E. Net Income (D - C)	P				1,208		4,286		
F. Incremental Benefit							2,957		

**CROP PRODUCTION COST AND RETURN FOR RAINTED
IN PADDY DIRECTSEEDED WITH 1ST CROPPING**

Cost: Financial Base										
	Unit	Unit Price	Amount	Present Price	Present (%)	Amount	Without Project		With Project	
							Price	Price (%)	Price	Price (%)
A. Variable Cost										
1. Man Labor	Man-Day		45	3,387	75%		3,556	75%	6,484	74%
Nursery	-do-	P 15.00		1,364	(30%)		1,432	(30%)	2,614	(30%)
Repair Dike	-do-	P 15.00	2.0	30					30	
Seeding/Transplanting	-do-	P 15.00	1.0	15					15	
Weeding	-do-	P 15.00	15.3	230					270	
Fertilization	-do-	P 15.00	2.0	30					27	
Spraying	-do-	P 15.00	1.0	15					27	
Harvesting	Ratio	1/15	15.5	383					813	
Threshing	-do-	1/15	3.0	383					813	
Winnowing	-do-	1/25	2.0	230					488	
Hauling/Storage	Man-Day	P 15.00	2.2	33					30	
Water Management	-do-	P 15.00								
Drying	-do-	P 15.00	1.0						32	
2. Land Preparation				747	(17%)		784	(17%)	1,021	(12%)
3. Input Materials				1,276	(28%)		1,340	(28%)	2,849	(33%)
Seed	kg	P 2.65/kg	175	464					150	
Fertilizer										
Urea	kg	P 4.96/kg	57.3	284					630	
16-20-0	kg	P 4.44/kg	30.0	133						
21-0-0	kg	P 2.77/kg	2.3	6						
14-14-14	kg	P 4.62/kg	43.2	200					989	
(Average N-P-K)	kg	37-13-6							87-30-30	
Agrochemicals										
Pesticide										
Liquid	l	P 164/l	0.81	133					492	
Granule	kg	P 15.00/kg								
Herbicide										
Liquid	l	P 85.6/l	0.46	40					171	
Granule	kg	P 8.3/kg	1.9	16						
Land charge	P		33%	1,118	25%		1,174	25%	2,269	26%
Others				972					1,085	
				146					1,184	
				4,505	100%		4,731	(100%)	8,753	100%
B. Fixed Cost										
Land charge	P	P 2.65/kg	2,170	5,750			2,279		12,190	
C. Total Production Cost										
(A + B)										
D. Gross Income	kg									
E. Net Income	P									
(D - C)										
F. Incremental Benefit										

**CROP PRODUCTION COST AND RETURN FOR MAINTAINED
IN PADDY DIRECTSEEDED WITH 2ND CROPPING**

Cost: Financial Base											
	Unit	Unit Price	Present		Without Project		With Project		Price	%	%
			Amount	Price	Amount	Price	Amount	Price			
A. Variable Cost											
1. Man Labor	Man-Day		33.7	3,026	75%	2,178	75%	69.7	6,640	74%	
Nursery	-do-			1,073	(27%)	1,127	(27%)		2,906	(30%)	
Repair/Dike	-do-		1.2	18				1.2	18		
Seeding/Transplanting	-do-		0.8	12				0.8	24		
Weeding	-do-		10.6	162				13.7	206		
Fertilization	-do-		0.8	12				1.8	27		
Spraying	-do-		0.8	12				1.8	27		
Harvesting	Ratio		13.2	318				31.8	883		
Threshing	-do-		2.5	38				6.9	883		
Winnowing	-do-		1.6	191				4.5	530		
Hauling/Storage	Man-Day		1.2	18				5	75		
Water Management	-do-							0	0		
Drying	-do-		0.8	12				2.2	33		
2. Land Preparation				779	(19%)	818	(19%)		1,001	(11%)	
3. Input Materials				1,174	(29%)	1,233	(29%)		2,933	(33%)	
Seed	kg		175	464				150	567		
Fertilizer											
Urea	kg		46.4	241				144	714		
16-20-0	kg		25.5	113							
21-0-0	kg		2.1	6							
14-14-14	kg		40.8	188				214	989		
(Average N-P-K)	kg							95-3-30			
Agrochemicals											
Pesticide											
Liquid	l		0.7	116				3	492		
Granule	kg										
Herbicide											
Liquid	l		0.40	35				2	171		
Granule	kg		1.38	999				35	2,324		
B. Fixed Cost			33	806	25%	1,049	25%		1,179	26%	
Land charge				193					1,145		
Others				4,025	100%	4,227	100%		8,964	100%	
C. Total Production Cost											
(A + B)											
D. Gross Income	kg		1,800	4770		1,890		5,000	13,250		
E. Net Income				745		782			1,286		
(D - C)											
F. Incremental Benefit									3,504		

**CROP PRODUCTION COST AND RETURN FOR IRRIGATION
IN PADDY TRANSPLANTING WITH 1ST CROPPING**

Cost: Financial Base											
		Present			Without Project			With Project			
Unit	Unit Price	Amount	Price (\$)	Amount	Price (\$)	Amount	Price (\$)	Amount	Price (\$)		
A. Variable Cost											
1. Man Labor											
Nursery	Man-Day	57.2	3,916	75% (34%)	4,307	81.7	6,214	74%			
Repair Dike	-do-	3.5	1,761		1,937	3.5	2,745	(33%)			
Seeding/Transplanting	-do-	1.5	53			1.5	53				
Weeding	-do-	15.0	225			15.0	225				
Fertilization	-do-	12.6	189			12.6	189				
Spraying	-do-	1.0	15			1.8	27				
Harvesting	-do-	0.5	8			0.9	14				
Threshing	Ratio	13.4	458			29.3	813				
Winnowing	-do-	3.5	458			6.2	813				
Hauling/Storage	-do-	2.4	275			4.3	488				
Water Management	Man-Day	2.6	39			4.5	68				
Drying	-do-	0	0			0	0				
Land Preparation	-do-	1.2	18			2.1	32				
2. Input Materials			1,021	(20%)	1,123		1,001	(12%)			
3. Seed			1,134	(22%)	1,247		2,446	(29%)			
Fertilizer	kg	80	212			44	166				
Urea	kg	45.8	227			127	630				
16-20-0	kg	5.3	24								
21-0-0	kg	-	-								
14-14-14	kg	85.2	394			214	989				
Agrochemicals	kg					67-30-30					
Pesticide											
Liquid	l	0.54	89			3	492				
Granule	kg	8.9	133								
Herbicide											
Liquid	l	0.54	46			2	171				
Granule	kg	1.12	9								
Land charge	P	33	1,292	25%	1,421	35	2,175	26%			
Others			611				1,085				
			681				1,090				
C. Total Production Cost	P		5,208	100%	5,728		8,389	100%			
(A + B)											
D. Gross Income	kg	2,590	6,864		7,550	4,600	12,190				
E. Net Income	P		1,656		1,822		3,801				
(D - C)											
F. Incremental Benefit										1,979	

**CROP PRODUCTION COST AND RETURN FOR IRRIGATION
IN PADDY TRANSPLANTING WITH 2ND CROPPING**

cost: financial base												
	Unit	Unit Price	Present		Without Project		With Project		Price	Amount	Price	Amount
			Amount	(%)	Price	(%)	Price	(%)				
A. Variable Cost												
1. Man Labor	Man-Day		46.4	75% (30%)	4,071	75% (30%)	6,400	74%		81.2		
Nursery	-do-	P 15.00	2.7		1,500		2,867			2.7		
Repair Dike	-do-	P 15.00	0.8		41		12			0.8		
Seeding/Transplanting	-do-	P 15.00	13.6		204		204			13.6		
Weeding	-do-	P 15.00	10.1		152		152			10.1		
Fertilization	-do-	P 15.00	0.8		12		27			1.8		
Spraying	-do-	P 15.00	0.8		12		27			1.8		
Harvesting	Ratio	1/15	10.0		396		883			31.8		
Threshing	-do-	1/15	3.1		396		883			6.9		
Winnowing	-do-	1/25	2.0		237		530			4.5		
Hauling/Storage	Man-Day	P 15.00	1.5		23		75			5.0		
Water Management	-do-	P 15.00	0		0		0			0		
Drying	-do-	P 15.00	1.0		15		33			2.2		
2. Land Preparation					1,001	(20%)	1,001	(12%)		1,001		
3. Input Materials					1,200	(24%)	1,320	(29%)		2,532		
Seed	kg	P 2.65/kg	80		212		166			44		
Fertilizer												
Urea	kg	P 4.96/kg	43.5		216		714			144		
16-20-0	kg	P 4.44/kg	8.9		40							
21-0-0	kg	P 2.7/kg	-		-							
14-14-14	kg	P 4.62/kg	91.5		423		989			214		
(Average N-P-K)	kg	33-14-13								95-30-30		
Agrochemicals												
Pesticide												
Liquid	l	P 164/l	0.60		99		492			3		
Granule	kg	P 15.00/kg	9.86		148							
Herbicide												
Liquid	l	P 85.6/l	0.60		52		171			2		
Granule	kg	P 8.3/kg	1.25		10					35		26%
Land Charge	P	33%	33%		1,221	25%	1,343	25%		2,240		
Others					528		1,061			1,379		
4. Total Production Cost (A + B)	P		4,922	100%	5,415	100%	8,640	100%		8,640		
D. Gross Income	kg	P 2.65/kg	2,240		2,464		5,000			13,250		
E. Net Income (D - C)	P		1,014		1,115		4,610			4,610		
F. Incremental Benefit												3,495

**CROP PRODUCTION COST AND RETURN FOR RAINTED
IN PADDY TRANSPLANTING WITH 1ST CROPPING**

Cost: Financial Base												
	Unit	Unit Price	Present			Without Project			With Project			
			Amount	Price	(%)	Amount	Price	(%)	Amount	Price	(%)	
A. Variable Cost												
1. Man Labor	Man-Day		63.4	3,426	75%	81.7	3,597	75%	6,214	74%		
Nursery	-do-		2.7	1,626	(36%)		1,797	(36%)	2,745	(33%)		
Repair Dike	-do-		1.0	41		3.5	53		53			
Seeding/Transplanting	-do-		18.0	270		15.0	225		225			
Weeding	-do-		15.3	230		12.6	189		189			
Fertilization	-do-		1.0	15		1.8	27		27			
Spraying	-do-		1.0	15		0.9	14		14			
Harvesting	Ratio		16.5	383		29.3	813		813			
Threshing	-do-		3.5	383		6.2	813		813			
Winnowing	-do-		2.0	230		4.3	483		483			
Hauling/Storage	Man-Day		1.9	29		4.5	68		68			
Water Management	-do-		-	-		0	0		0			
Drying	-do-		1.0	15		2.1	32		32			
2. Land Preparation				555	(12%)		583	(12%)	1,021	(12%)		
3. Input Materials				1,245	(27%)		1,307	(27%)	2,448	(29%)		
Seed	kg		95	252					44			
Fertilizer												
Urea	kg		36.1	179					127			
16-20-0	kg		14.4	64								
21-0-0	kg		-									
14-14-14	kg		79.6	368					214			
(Average N-P-K)	kg								87-30-30			
Agrochemicals												
Pesticide												
Liquid	l		1.59	261					3			
Granule	kg											
Herbicide												
Liquid	l		0.43	37					2			
Granule	kg		10.11	84								
B. Fixed Cost			33	1,131	25		1,187	25%	2,175	26%		
Land charge				972					1,085			
Others				159					1,090			
C. Total Production Cost				4,557	100%		4,784	100%	8,389	100%		
(A + B)												
D. Gross Income	kg		2,170	5,751		2,279	6,038		4,600	12,190		
E. Net Income				1,194			1,254		3,801			
(D - C)												
F. Incremental Benefit									2,547			

**CROP PRODUCTION COST AND RETURN FOR RAINTED
IN PADDY TRANSPLANTING WITH 2ND CROPPING**

Cost: Financial Base									
	Unit	Unit Price	Amount	Present Price	Without Project Price	With Project Price	Amount	Without Project (%)	With Project (%)
A. Variable Cost									
1. Man Labor	Man-Day		49.3	2,874	3,018	6,400	81.2	75%	74%
Nursery	-do-		1.9	1,306	1,371	2,867	2.7	(34%)	(33%)
Repair Dike	-do-		1.2	29		41	0.8		
Seeding/Transplanting	-do-		14.4	216		204	13.6		
Weeding	-do-		10.8	162		152	10.1		
Fertilization	-do-		0.8	12		27	1.8		
Spraying	-do-		0.8	12		27	1.8		
Harvesting	Ratio		13.3	318		883	31.8		
Threshing	-do-		2.5	318		883	6.9		
Winnowing	-do-		1.6	191		530	4.5		
Hauling/Storage	Man-Day		1.2	18		75	5.0		
Water Management	-do-		-	-		0	0		
Drying	-do-		0.8	12		33	2.2		
2. Land Preparation				495	520	1,001		(13%)	(12%)
3. Input Materials				1,073	1,127	2,532		(28%)	(29%)
Seed	kg		95	252		166	44		
Fertilizer									
Urea	kg		30.6	152		714	144		
16-20-0	kg		12.2	54					
21-0-0	kg		-	-					
14-14-14	kg		64.5	298		989	214		
(Average N-P-K)	kg						95-30-30		
Agrochemicals									
Pesticide									
Liquid	l		1.31	214		492	3		
Granule	kg								
Herbicide									
Liquid	l		0.37	32		171	2		
Granule	kg		8.57	71					
Land charge			33	948	995	2,240	35	25%	26%
Others				806		1,179			
(A + B)				142		1,061			
C. Total Production Cost				3,822	4,014	8,640		100%	100%
D. Gross Income	kg		1,800	4,770	5,009	13,250	5,000		
E. Net Income				948	995	4,610			
(D - C)									
F. Incremental Benefit						3,615			

CROP PRODUCTION COST AND RETURN

		Sugar Cane Plant				Sugar Cane Ratoon				Cost: Financial Base	
	Unit	Amount	Price	(%)	Amount	Price	(%)	Amount	Price	Amount	(%)
A. Variable Cost											
1. Man Labor	M. Day/ha	102.3	11.747	65%	61.5	8.157	65%	4801/	134.4	272.4	91%
Cane plants preparation	- do -	15	1,535	(8%)	1	924	(7%)		176.4		(59%)
Land preparation	- do -	1.5	225		0.9	14					
Planting & handring	- do -	5.0	75		2	30					
Weeding & Cultivation	- do -	1.6	24		0.5	8					
Fertilization	- do -	4	60		3	45					
Harvesting Hauling	- do -	75.2	1128		54.1	612		4802/	42		
Transporting	- do -										
Processing	- do -										
2. Mechanical Power											
Land Preparation	P/ha	347%	6,444	(36%)	100%	3,840	(31%)	95	95	(32%)	
Planting Preparation	P600/ha	47%	2,032			600					
Weeding & Cultivation	- do -	200%	282		200%	1,200					
Transporting	- do -	480%	2,880		340%	2,040		4803/	96		
3. Input & Materials											
(1) Seed	P5/1000/kg	51,700	3,768	(21%)		3,393	(27%)				
(2) Fertilizer			259								
Urea	P/kg	331	1,642		318.5	1,580					
16-20-0	- do -	262.5	1,166		250.0	1,110					
14-14-14	- do -	44.5	206		40.9	192					
18-46-0	- do -	36	238		39.0	257					
0-0-60	- do -	71.5	257		70.5	254					
(Average N-P-K)	204-79-49				196-73-48						
(3) Pesticide											
Liquid	P	2.8	188								
Grande	P										
B. Fixed Cost											
	P		6,343	35%	54%	4,405	35%	10%	27.2	9%	
C. Total Production Cost (A + B)											
	P		18,090	100%		12,562	100%		299.6	100%	
D. Gross Income											
Sugar yield	P	106.8	20,437		80.9	15,480			640		
Marasses	P	3.04	19,893		80.9	15,068			480+4.5		
E. Net Income (D-C)											
	P		2,347		2.06	4.12			340		

1/ Unit Price is P28/Nuts
 2/ Unit price is P8.75/nuts
 3/ Unit price is P1.5/ha
 4/ Unit Price is P6.00/kg

ESTIMATED CROP PRODUCTION COST AND RETURN FOR UP-LAND CROPS WITH PROJECT

Cost: Financial Price											
	Unit	Unit Price	Amount	Corn Price	(%)	Amount	Tomato Price	(%)	Amount	Mung Beans Price	(%)
A. Variable Cost											
1. Man Labor ^{1/}				3,812	71%		5,792	62%		3,250	64%
Seeded preparation											
Cost of Seeding				495	(9%)	75	1,125	(12%)	23	345	(7%)
Planting/Transplanting		₱15/day	33			2	30				
Irrigation				60		5	75				
Hilling up						12	180		0	0	
Cultivation/weeding						2	30				
Fertilization			3	45		5	75		3	45	
Chemical Application			1	15		2	30		1	15	
Harvesting			16	240		3	45		1	15	
Husking &			4	60		30	450		10	150	
Other			4	60		7	105		4	60	
2. Land Preparation				1,300	(24%)		1,300	(14%)		1,300	(26%)
3. Input Materials				2,017	(37%)		3367	(36%)		1,605	(32%)
Fertilizer ^{2/}	kg	₱9.5/kg	17	162			100		20	300	
Urea		₱4.96/kg	67	332		49	243				
14-14-14		3.6/kg				100	360				
18-46-0		4.62/kg	214	989		260	1,716		214	989	
(Average N-Pk)		60-30-30				70-120-60			30-30-30		
Agro Chemicals											
Pesticide											
Liquid ^{2/}		₱178/l	3l	534		6l	948		2l	316	
Granule											
Herbicide											
Liquid											
Granule											
B. Fixed Cost ^{1/}				1,586	29%	62%	3,591	38%	56.8	1,845	36%
Land Change			41.6	1,085 ^{4/}			1,085			1,085	
Others				501			2,506			760	
C. Total Production Cost				5,398	100%		9,383	100%		5,095	100%
(A + B)											
D. Gross Income		₱3.34/kg	3,500	11,690		17,300	34,600				
E. Net Income				6,292			25,217				

1/: BAE ? ? ? ?
 2/: Liquid: carn-Azodoerin as of Dec. 1984
 3/: Price of Fertilizers - as of Oct. 1984
 4/: Land charge was assumed as the same of irrigated paddy with project
 5/: Weight average of 20t/ha of 410ha in dry season and 10t/ha of 205ha. in wet season

LABOR FORCE REQUIREMENT AT PRESENT

Item	Area	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1. Labor Requirement/ha														
1) Rainfed Paddy														
Direct seeding 1st	1				1.45	6.68	12.97	11.01	9.9	11.5	11.5	9.19	8.18	65.01
Direct seeding 2nd	1	9.13	9.13						0.1	4.32	8.67			48.72
Transplanting 1st	1				1.67	12.19	20.51	15.36	9.65	11.63	11.63			82.67
Transplanting 2nd	1	9.17	9.17						0.13	8.17	15.58	14.45	8.2	64.87
2) Irrigated Paddy														
Direct seeding 1st	1				1.64	5.52	12.57	12.02	21.30	13.16	12.96	10.36	10.26	78.67
Direct seeding 2nd	1	10.81							0.08	3.40	8.48			54.37
Direct seeding 3rd	1	5.82		8.26	12.34	10.87	3.59							54.37
Transplanting 1st	1				1.49	10.61	17.54	13.04	8.84	11.79	11.59			74.88
Transplanting 2nd	1	8.89							0.11	7.12	14.22	13.63	8.12	60.78
Transplanting 3rd	1	10.04		10.15	11.88	8.77	2.89							60.78
3) Sugar cane														
Plant cane	1	17.24	17.24	17.74	17.74	4.73	3.23	1	1	0.50	0.50	13.70	14.93	109.59
Ratoon cane	1	10.78	10.78	10.78	10.78	0.55	0.65	0.33	0.33	0.33	0.33	10.45	10.45	66.60
4) Coconut	1				10	11						10	11	42
2. Total Labor Requirement														
1) Rainfed Paddy														
Direct Seeding 1st	4400				6380	29392	57068	48444	43560	50600	50600	20999	18691	286044
Direct Seeding 2nd	2285	20862	20862		552	4023	6769	5076	229	9871	19811	20999		111325
Transplanting 1st	330								3185	3838	3838			27281
Transplanting 2nd	170	1559	1559						22	1389	2649	2456	1394	11628
2) Irrigated Paddy														
Direct seeding 1st	1477				1719	8155	18563	17727	31462	19433	19137	13193	13058	116196
Direct seeding 2nd	1273	13983	137755						98	4331	10795			69213
Direct seeding 3rd	120	698	1456	992	1479	1305	431						163	6524
Transplanting 1st	113				168	1198	1982	1473	999	1332	1309	1322	787	8461
Transplanting 2nd	97	862	845						10	689	1379			5894
Transplanting 3rd	10	100	161	102	119	88	29							609
3) Sugar cane														
Plant cane	125	2154	2154	2217	2217	591	412	125	125	63	63	1713	1867	13701
Ratoon cane	255	2748	2748	2748	2748	166	166	83	83	83	83	2665	2665	16986
4) Coconut	200				2000	2200						2000	2200	8400
3. Available Labor Force														
		229240	229240	229240	229240	229240	229240	229240	229240	229240	229240	229240	229240	2750880
4. Balance														
		186274	185700	223181	211858	182122	149820	156312	149467	137611	119576	184892	188425	
5. Ratio of C/D (%)														
		18.7	19.0	2.6	7.6	20/6	37.3	31.8	34.8	40/0	47.8	19.3	17.8	24.8

DRAFT ANIMAL FORCE REQUIREMENT AT PRESENT

Item	Area	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1. Labor Requirement/ha														
1) Rainfed Paddy														
Direct seeding 1st		1.02	4.28	4.28	1.02				0.07	2.89	3.55	1.79		10.6
Direct seeding 2nd														8.3
Transplanting 1st		1.07	4.58	4.58	1.07				0.08	3.24	3.98	2.00		11.3
Transplanting 2nd														9.3
2) Irrigated Paddy														
Direct seeding 1st		0.66	2.79	2.79	0.66				0.05	1.88	2.31	1.61		6.9
Direct seeding 2nd														5.4
Direct seeding 3rd		2.31	2.22	0.1									0.77	5.4
Transplanting 1st		2.18	2.18	0.42					0.05	1.81	2.23	1.11		5.7
Transplanting 2nd														5.2
Transplanting 3rd													0.42	5.2
2. Labor Requirement for each Operation														
1) Rainfed Paddy														
Direct Seeding 1st	4400	4488	18832	18832	4488				160	6604	8112	4090		46640
Direct Seeding 2nd	2285													18966
Transplanting 1st	330	353	1511	1511	353				14	551	677	340		3728
Transplanting 2nd	170													1582
2) Irrigated Paddy														
Direct seeding 1st	1477	975	4121	4121	975				64	2393	2941	1477		10192
Direct seeding 2nd	1273													6875
Direct seeding 3rd	120												92	647
Transplanting 1st	113	62	276	276	62				5	176	216	108		676
Transplanting 2nd	97													505
Transplanting 3rd	10												4	52
3. Total Labor Requirement		299	288	16	5878	24740	24740	5878	243	9724	11946	6015	96	89863
4. Available Labor Force		137180	137180	137180	137180	137180	137180	137180	137180	137180	137180	137180	137180	1646161
5. Balance		136881	136892	137164	131302	112440	112440	131302	136937	127456	125234	131165	137084	-
6. Ratio of C/D (%)		0.2	0.2	0	4.3	18.0	18.0	4.3	0.2	7.1	8.7	4.4	0.1	5.5

LABOR FORCE REQUIREMENT WITH PROJECT

Items	Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
A. Labor Requirement														
Per hectare														
1. Irrigated Paddy														
Direct seeding 1st	1	22.09	36.19	17.44	5.65	14.91	43.46	19.51	0.46	27.03	26.73	16.21	3.28	93.48
2nd	1	1.11	8.01				43.46			2.42	10.39			90.58
4th	1						4.32	11.67	15.93	0.48	27.05	26.73	11.13	86.18
5th	1	15.91	0.46	29.23	28.93	8.66	22.18	15.72	2.66	26.98	26.68	4.92	8.8	90.58
Transplanting 1st	1	22.09	36.19	18.94	10.87	14.91	43.46	19.51	0.46	27.03	26.73	17.98	8.8	102.88
2nd	1	0.61	12.99				43.46			1.39	15.33			101.78
4th	1						3.83	18.22	16.92	4.53	27.0	26.68	7.08	101.78
5th	1	14.75	2.54	29.23	28.93									97.28
2. Serruco Irrigated Paddy														101.76
Direct seeding 1st	1						6.07	13.68	19.51	0.46	27.03	26.73	16.21	93.48
2nd	1	3.28	22.09	36.19			8.66	22.18	15.72	2.66	26.98	26.68	17.98	90.58
Transplanting 1st	1	8.8	22.09	36.19			10.24	5.94	0.44	14.38	14.06			102.88
2nd	1													101.78
3. Irrigated Corn														51.2
4. Irrigated Vegetable														150.2
1st	1	1.0	90.5				24.6	25	1.0	90.5	9.1	24.6	25.0	150.2
2nd	1	9.1	24.6	25	1.0	90.5								150.2
3rd	1	1.64	11.27	5.86	20.43									39.2
5. Irrigated M ng beans														
B. Total Labor Requirement														
1. Irrigated Paddy														
Direct seeding 1st	2,995	66,160	108,389							80,955	80,056	48,549	9,824	219,973
2nd	2,995								1,378	7,248	31,118			211,288
Scrapping biannual	600									16,218	16,038	9,726	1,968	56,088
1st year	600	13,254	21,714	17,538	19,358	8,946	26,076	7,002	9,558	288	16,230	16,038	6,678	54,348
2nd	600	7,546	276							1,452	6,234			34,718
5th	600	666	4,806	10,484	3,390		2,992							54,348
Late	600													51,708
3rd	600													9,630
4th	600													205,246
5th	600													203,051
Transplanting 1st	1995	44,070	72,199						5,307	53,825	53,227	35,870	17,556	41,152
2nd	1995									2,773	30,583			40,712
Scrapping biannual	400									1,792	10,672	7,192	3,520	30,180
1st year	400	8,836	14,476	11,692	11,572	5,964	17,384	7,288	6,768	556	6,132			40,712
2nd	400	5,900	1,016											38,912
Late	400	244	5,196	7,576	4,348		1,532			1,852	10,800	10,672	7,700	40,712
3rd	400													38,912
4th	400													10,532
5th	400													20,098
2. Serruco Irrigated Paddy														
Direct seeding 1st	215						1,305	2,911	4,195	99	5,811	5,747	3,485	19,474
2nd	215	705	4,749	7,781			1,256	3,216	2,279	386	3,912	3,869	2,607	14,918
Transplanting 1st	145	1,276	3,203	5,248			2,099	1,218	90	2,948	2,882			14,759
2nd	205													10,496
3. Irrigated Corn														
4. Irrigated Vegetable														
1st	205						1,866	5,043	5,125	205	18,553	3,731	10,086	30,792
2nd	410	410	37,105											61,582
3rd	103	937	2,534	2,575	103	9,322								15,471
5. Irrigate Mungbeans														
1st	205	336	2,310	1,201	4,188									8,035
C. Grand Total Labor Requirement														
1st year		151,430	267,371	46,035	33,221	54,010	112,004	120,287	14,794	195,805	251,118	125,496	49,210	1,422,381
2nd year		114,804	240,491	34,845	12,029	62,814	142,508	116,593	29,780	168,927	239,072	141,072	58,100	1,361,025
Available Labor Force		347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	4,166,400
D. Available Labor Force														
1st year		195,770	79,229	301,165	313,979	293,190	235,196	226,913	332,406	151,395	96,082	221,704	297,990	2,744,019
2nd year		232,396	106,709	312,355	335,171	284,386	204,692	230,617	317,420	178,273	108,128	206,128	289,100	2,805,375
E. Labor Balance														
1st year		43.6	77.2	13.3	9.6	15.6	32.3	34.6	4.3	56.4	72.3	36.1	14.2	34.1
2nd year		33.1	69.3	10.0	3.5	18.1	41.0	33.6	8.6	48.7	68.9	40.6	16.7	32.7
F. Ratio (C/D)														
1st year														
2nd year														

1/ Available labor force is as of year 2000.

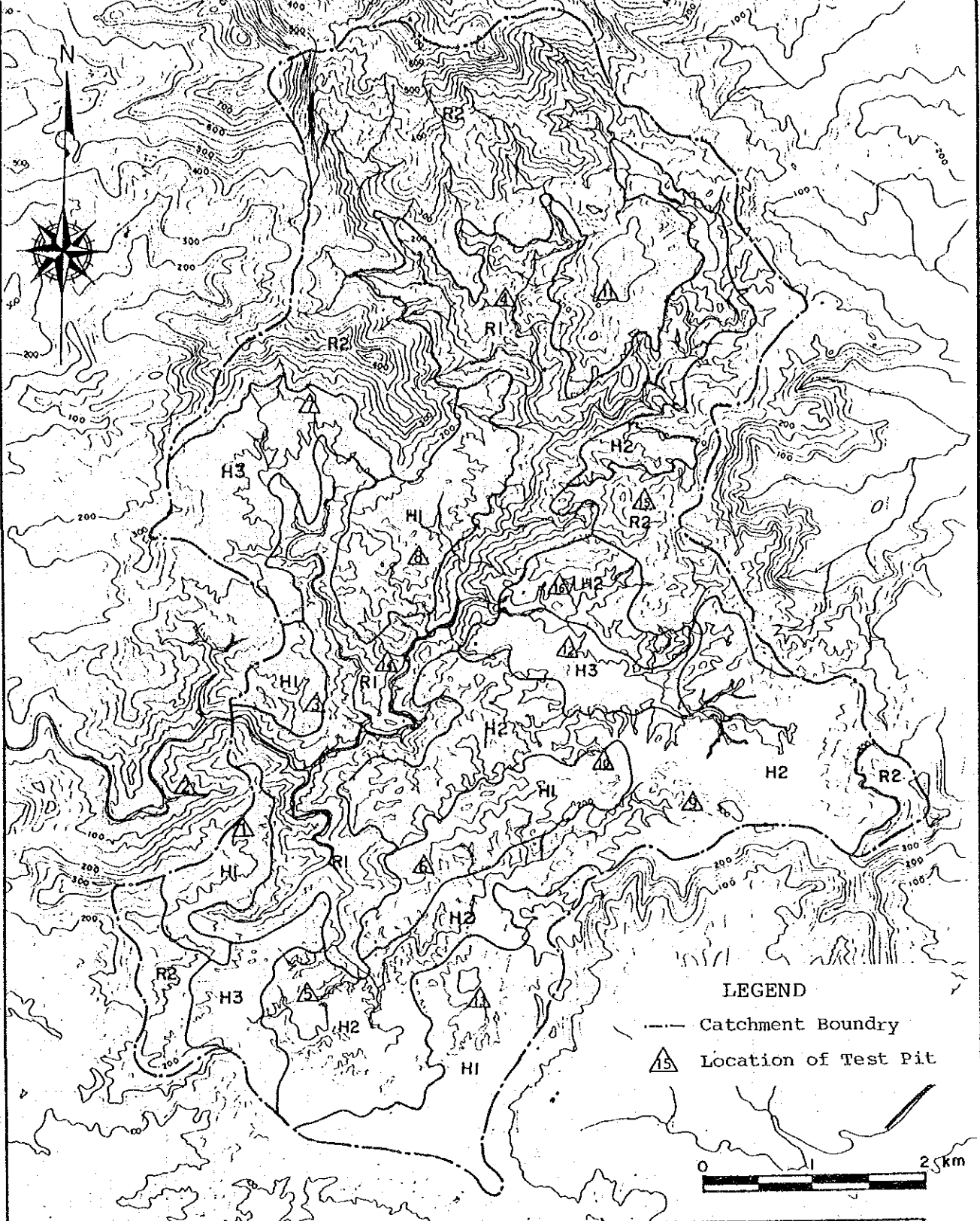
DRAFT ANIMAL FORCE REQUIREMENT WITH PROJECT

Items	Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
A. Labor Requirement														
PER HECTARE														
1. Irrigated Paddy														
Direct seeding 1st						2.85	2.85			1.3	3.74	0.16		5.7
2nd														5.2
3rd		0.65	3-9	0.65										5.2
4th						2.27	2.93							5.2
5th						2.49	3.13	0.18		0.59	3.57	1.04	2.6	5.7
Transplanting 1st														5.7
2nd		0.29	3.63	1.78										5.7
3rd														5.7
4th		0.08					1.78	3.63	0.29			2.49	3.13	5.7
5th														5.7
2. Serruco Irrigated Paddy														
Direct seeding 1st						2.85	2.85				1.3	3.74	0.16	5.7
2nd														5.2
Transplanting 1st						2.49	2.49	3.13	0.08	0.59	3.57	1.04		5.7
2nd														5.2
3. Irrigated Corn														
1st						1.5	0.5							
2nd		1.0	1.0											
3rd		0.6	1.4											
4. Irrigated Mungbeans														
1st						1.0					1.0			
2nd														
3rd														
B. Total Labor Requirement														
1. Irrigated Paddy	2,995					8,536	8,536			3,894	11,201	479		17,072
Direct seeding 1st	2,995													15,574
2nd														3,420
3rd														3,120
4th														0
5th														3,120
Late	600													3,120
5th	600													3,120
Second year	600													3,120
3rd	600													3,120
4th	600													3,120
5th	600													3,120
Transplanting 1st	1,995					4,968	6,244	160		1,177	7,122	2,075		11,372
2nd	1,995													10,374
Scraping biannual	400													2,280
First year 1st	400					996	1,252	32		236	1,428	416		2,080
2nd	400													32
5th	400													2,280
Late	400													2,280
5th	400													2,280
Second year	400													2,280
3rd	400													2,280
4th	400													2,280
5th	400													2,280
Early	400													2,248
2. Serruco Irrigated Paddy														
Direct seeding 1st	215													1,296
2nd	215													1,118
Transplanting 1st	145													827
2nd	145													755
3rd	205													411
3. Irrigated Corn														
1st	205													410
2nd	410													820
3rd	103													206
4th	103													410
5. Irrigated Mungbeans														
1st	205													410
2nd	410													820
3rd	103													206
4th	103													410
C. Grand Total Labor Requirement														
First year		258	390	-	-	16,723	19,024	1,259	12	6,087	22,771	4,798	185	71,507
Second year		732	4,182	1,102	-	14,017	18,136	4,437	128	5,071	19,099	6,842	2,997	76,743
Available Labor Force ^{1/}		137,180	137,180	137,180	137,180	137,180	137,180	137,180	137,180	137,180	137,180	137,180	137,180	1,646,161
Labor Balance														
First year		136,922	136,790	137,180	137,180	120,457	118,156	135,921	137,168	131,093	114,409	132,382	136,995	1,574,653
Second year		136,448	132,998	136,078	137,180	123,163	119,044	132,743	137,052	132,109	118,081	130,338	134,183	1,569,417
F. Ratio (C/D)		0.2	0.3	-	-	12.2	13.9	0.9	0.1	4.4	16.6	3.5	0.1	4.3
First year (%)		0.5	3.0	0.8	-	10.2	13.2	3.2	0.1	3.7	13.9	5.0	2.2	4.7
Second year (%)														

^{1/} Available labor force is as of year 2000.

WATERSHED DEVELOPMENT

LAND CLASSIFICATION MAP OF THE WATERSHED AREA



Mapping Unit	Description	Area (Has)
H1	High hills with undulating ridges and long continuous slopes, slight to moderately dissected.	765
H2	Medium to high hills mostly of parallel ridges, moderate to highly dissected.	991
H3	Undulating to low hilly areas with short slopes and isolated alluvial terraces, slightly dissected.	383
R1	Rugged to very rugged deeply incised V-shape valleys along meandering rivers, highly dissected.	843
R2	High mountains with long continuous steep slopes, moderate to highly dissected.	1,438

FERTILITY TESTS AND NUTRIENT REQUIREMENT ^{1/}

Lab. No.	LOCATION	RESULT OF ANALYSIS					
		Texture	pH	Organic Matter %	Phosphorus ppm	Potassium ppm	(Cold) H ₂ SO ₄ Ratio
FS-1		CL	5.3	1.97	13.5	40	
2		SL	5.5	2.10	12.3	50	
3		CL	4.9	2.91	12.5	90	
4		CL	5.1	2.98	12.5	30	
5		S,CL,SL	5.3	2.22	11.7	40	
6		L	5.4	2.96	14.0	30	
7		SL	5.3	2.77	12.5	100	
8		CL	5.4	2.34	16.5	60	
9		L	4.9	3.39	8.2	50	
10		CL	5.3	2.46	8.3	30	

^{1/} Sampling sites are shown in FIGURE of page 122.

FERTILITY TESTS AND NUTRIENT REQUIREMENT

Lab. No.	LOCATION	RESULTS OF ANALYSIS				
		Texture	pH	Organic Matter %	Phosphorus ppm	Potassium ppm
		1:1	Ratio	(Olsen)	(Cold)	H ₂ SO ₄
FS-11		L	4.7	2.44	6.5	40
12		L	5.3	2.08	8.2	50
13			4.8	2.49	6.8	10
14			4.8	2.60	6.5	10
15			5.1	2.39	7.5	50
16			5.2	2.27	7.0	T
17			4.9	1.99	6.5	20

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: 1
 SOIL SERIES: _____
 LOCATION: _____

Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution			Gravel (%)	Class	Textural	Percent Moisture Retention of Metric Tension in Bars of	Readily Available Moisture (%)
		Sand (%)	Silt (%)	Clay (%)				1/3	15
1-1	0-14	38	34	28	-	CL		29.34	12.89
2	14-40	29	29	42	-	C		38.98	18.54
3	40-86	24	26	50	-	C		45.20	22.54
4	86-150	31	29	40	-	C, CL		47.02	22.61

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Exchange Sodium Percentage
1-1	5.7	11.05	16.5	3.46	0.21	0.21	6.51	5.77	23.75	53.47	
2	5.5	9.54	11.0	1.75	0.05	0.35	6.31	7.65	23.90	60.04	
3	5.9	8.04	9.5	1.51	0.08	0.53	8.10	9.01	25.76	68.79	
4	6.0	8.04	6.5	1.40	0.06	0.54	10.39	12.18	31.21	74.24	

Note: Mr. Mario M. Sagum, Head, Soil & Water Laboratory Services

SOIL PROFILE LABORATORY ANALYSIS SHEET

2

Date Samples Submitted: _____
Date Tests Completed: _____

MASTER PIT NO.: _____
SOIL SERIES: _____
LOCATION: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Gravel	Class	Textural	Percent Moisture Retention	Readily Available Moisture (%)
		(%) Sand : (% Silt : (% Clay			of Metric Tension in Bars of:		
					1/3	15	
2-1	0-18	53 : 28 : 19	-	SL		26.09	11.04
2	18-52	57 : 21 : 22	-	SCL		26.28	14.13
3	52-96	58 : 22 : 20	-	SCL, SL		39.14	12.02
4	96-160	63 : 21 : 16	-	SL		23.52	11.78

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Na ⁺	K ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Exchangeable Sodium Percentage (%)
2-1	5.8	10.55	18.9	2.39	0.22	0.22	0.22	12.07	11.55	34.61	69.52	
2	5.6	9.54	18.1	1.18	0.05	0.35	0.05	14.78	14.28	39.00	75.54	
3	5.8	9.54	11.1	1.06	0.05	0.40	0.05	18.97	13.45	42.41	77.51	
4	5.9	8.04	11.0	0.97	0.05	0.35	0.05	21.82	12.06	42.32	81.00	

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: 3
 SOIL SERIES: _____
 LOCATION: _____

Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural Class	Percent Moisture	Retention of Metric Tension in Bars of	Readily Available Moisture (%)
										1/3	15
3-1	0-12	39	25	36	-	-	CL		29.61	13.95	15.66
2	12-32	32	24	44	-	-	C		33.94	15.85	18.09
3	32-84	24	24	52	-	-	C		40.53	18.35	22.18
4	84-150	36	28	36	-	-	CL		38.59	17.25	21.34

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Na ⁺	K ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Sodium Percentage	Exchangeable Sodium Percentage
3-1	5.1	10.55	11.7	2.39	0.13	0.13	0.13	3.84	3.86	18.51	43.00		
2	5.0	10.55	8.2	1.77	0.05	0.21	0.05	3.45	3.78	18.04	41.52		
3	5.0	10.55	7.5	1.49	0.05	0.21	0.05	4.66	5.67	21.14	50.09		
4	5.3	9.54	6.5	0.66	0.05	0.54	0.05	12.71	12.52	35.36	73.02		