

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DEPARTMENT OF AGRARIAN REFORM (DAR)

**THE FEASIBILITY STUDY
ON
DEVELOPMENT OF AGRARIAN REFORM
COMMUNITIES
IN
MARGINAL AREAS
IN
THE REPUBLIC OF THE PHILIPPINES**

ANNEX (II)

JULY, 1997

JICA LIBRARY



J 1137887 (4)

**SANYU CONSULTANTS INC.
PACIFIC CONSULTANTS INTERNATIONAL**

AFA
J R
97-40

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DEPARTMENT OF AGRARIAN REFORM (DAR)

THE FEASIBILITY STUDY ON
DEVELOPMENT OF AGRARIAN REFORM COMMUNITIES IN
MARGINAL AREAS IN THE REPUBLIC OF THE PHILIPPINES

ANNEX (II)

JULY 1997

SANYU CONSULTANTS INC.
PACIFIC CONSULTANTS INTERNATIONAL



118
81
AFA
BRARY

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DEPARTMENT OF AGRARIAN REFORM (DAR)

**THE FEASIBILITY STUDY
ON
DEVELOPMENT OF AGRARIAN REFORM
COMMUNITIES
IN
MARGINAL AREAS
IN
THE REPUBLIC OF THE PHILIPPINES
ANNEX (II)**

JULY 1997

**SANYU CONSULTANTS INC.
PACIFIC CONSULTANTS INTERNATIONAL**



1137887(4)

LIST OF ANNEX

- Annex A. Implementing Arrangement and Others**
- Annex B. Comprehensive Agrarian Reform Program (CARP)**
- Annex C. Topographic Survey**
- Annex D. Rural Socio-Economic Survey**
- Annex E. Meteorology and Hydrology**
- Annex F. Soil, Land-Use and Agronomy**
- Annex G. Animal Husbandry and Inland Fisheries**
- Annex H. Farmers' Organization and Supporting Services**
- Annex I. Rural Sociology**
- Annex J. Irrigation and Drainage**
- Annex K. Post-Harvest and Rural Agro-Industry**
- Annex L. Classification of Model Areas and Selection of Typical Model Areas**
- Annex M. Physical Plan**
- Annex N. Project Implementation and Cost Estimate**
- Annex O. Agro-Economy, Project Benefits and Project Evaluation**
- Annex P. Environment**
- Annex Q. Relate Studies and Projects for Development of ARCs**
- Annex R. Government and Local Staff Interviewed by the Study Team**
- Annex S. Collected Data**

ANNEX J. IRRIGATION AND DRAINAGE

J.2 Feasibility Study

List of Tables

Table J.2-1(1)	Calculation of Reference Crop Evapotranspiration(ET _o) for Sappaac ARC
Table J.2-1(2)	Calculation of Reference Crop Evapotranspiration(ET _o) for Cofcaville ARC
Table J.2-1(3)	Calculation of Reference Crop Evapotranspiration(ET _o) for Marangog ARC
Table J.2-1(4)	Calculation of Reference Crop Evapotranspiration(ET _o) for Silae ARC
Table J.2-2(1)	Determination of Crop Coefficient for Garlic(Sappaac ARC)
Table J.2-2(2)	Determination of Crop Coefficient for Mungbean (Cofcaville ARC)
Table J.2-2(3)	Determination of Crop Coefficient for Squash (Marangog ARC)
Table J.2-2(4)	Determination of Crop Coefficient for Mungbean(Silae ARC)
Table J2-3(1)	Estimation of Irrigation Water Requirement for Sappaac Area (Without Effective Rainfall)
Table J2-3(2)	Estimation of Irrigation Water Requirement for Cofcaville Area (Without Effective Rainfall)
Table J2-3(3)	Estimation of Irrigation Water Requirement for Marangog Area (Without Effective Rainfall)
Table J2-3(4)	(4)Estimation of Irrigation Water Requirement for Silae Area (Without Effective Rainfall)
Table J2-4(1)	Estimation of Irrigation Water Requirement for Sappaac ARC (With Effective Rainfall)
Table J2-4(2)	Estimation of Irrigation Water Requirement for Cofcaville ARC (With Effective Rainfall)
Table J2-4(3)	Estimation of Irrigation Water Requirement for Marangog ARC (With Effective Rainfall)
Table J2-4(4)	Estimation of Irrigation Water Requirement for Silae ARC (With Effective Rainfall)
Table J.2-5(1)	Reservoir Operation Study for Sappaac ARC
Table J.2-5(2)	Reservoir Operation Study for Cofcaville ARC
Table J.2-5(3)	Reservoir Operation Study for Silae ARC

Table J.2-1(1) Calculation of Reference Crop Evapotranspiration (ET_o) for Sappaac ARC

Lat. : 17° - 30' Long. : 128° - 38'
Alt. : 230 m

Item	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1. T _{mean} (°C)	27.9	27.4	26.7	27.2	27.2	27.0	25.9	25.5	26.0	27.6	28.8	28.7
2. RH _{mean} (%)	83	85	87	85	81	79	75	74	75	75	75	78
3. Wind Speed (km/day)	184	189	206	203	86	86	86	86	86	86	86	86
4. Dewpoint (°C)	17	17	17	16	16	15	14	13	13	14	16	16
5. Cloudiness	6	7	7	7	6	5	4	4	4	4	5	6
6. Sun shine hour (hr)												
7. ea (mbar)	35.9	35.8	33.7	35.7	35.7	35.7	31.9	31.8	33.6	35.8	38.0	38.0
8. ed (mbar)	29.8	30.4	29.4	30.4	29.0	28.2	23.9	23.5	25.2	26.9	28.5	29.6
9. (ea - ed) (mbar)	6.1	5.4	4.4	5.4	6.8	7.5	8.0	8.3	8.4	9.0	9.5	8.4
10. f(u)	0.77	0.78	0.83	0.82	0.50	0.50	0.50	0.50	0.50	0.53	0.50	0.50
11. (1-w)	0.23	0.23	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.22	0.22	0.29
12. (= 9 * 10 * 11) (mm/day)	1.08	0.96	0.87	1.05	0.82	0.90	1.00	1.04	1.05	1.09	1.05	1.22
13. Ra (mm/day)	16.1	16.1	15.8	14.9	12.7	12.1	11.2	11.7	12.1	14.6	15.6	16.1
14. n/N	0.30	0.15	0.15	0.15	0.3	0.45	0.55	0.55	0.55	0.55	0.45	0.3
15. Rs (mm/day)	6.44	5.23	5.14	4.84	5.48	5.75	5.88	6.14	6.88	7.67	7.41	6.44
16. Rhs (= 0.75 * Rs) (mm/day)	4.83	3.92	3.86	3.63	4.11	4.31	4.41	4.61	5.16	5.75	5.56	4.83
17. f(T)	16.3	16.2	16.0	16.1	16.1	16.1	15.9	15.8	15.9	16.2	16.5	16.4
18. f(ed)	0.10	0.10	0.10	0.10	0.10	0.11	0.12	0.13	0.12	0.11	0.11	0.10
19. f(n/N)	0.37	0.24	0.24	0.24	0.37	0.51	0.60	0.60	0.60	0.60	0.51	0.37
20. Rn1 (17 * 18 * 19)	0.60	0.38	0.39	0.38	0.62	0.87	1.19	1.20	1.14	1.09	0.88	0.61
21. Rn (=16 - 20) (mm/day)	4.23	3.54	3.47	3.25	3.49	3.44	3.22	3.41	4.02	4.66	4.68	4.22
22. W * Rn (mm/day)	3.26	2.73	2.64	2.47	2.65	2.61	2.42	2.56	3.02	3.59	3.65	3.00
23. (=12 + 22) (mm/day)	4.33	3.69	3.51	3.52	3.47	3.52	3.42	3.60	4.07	4.68	4.70	4.21
Udat/Unight	1.00	1.00	1.00	1.00	0.85	0.77	0.70	0.68	0.61	0.55	0.79	0.85
Uday (m/sec)	1.1	1.1	1.2	1.2	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5
24. C	1.02	1.00	1.00	0.99	1.01	1.02	1.02	1.02	1.04	1.05	1.04	1.03
25. ET _o (=23 * 24) (mm/day)	4.4	3.7	3.5	3.5	3.5	3.5	3.5	3.7	4.2	4.9	4.9	4.3

Data source : PAGASA
Data Station : Mean Temperature : Vigan, Ilocos. (1977 - 1986)
Relative Humidity : Vigan, Ilocos. (1977 - 1986)
Wind Speed : Bagio, La Union. (1977 - 1986)
Dewpoint : Bagio, La Union. (1977 - 1986)
Cloudiness : Bagio, La Union. June - Sept. (1977 - 1986), Oct. - May (1977 - 1985)
Uday/unight : Bagio, La Union.

Table J.2-1(2) Calculation of Reference Crop Evapotranspiration (ET_o) for Cofcaville ARC

Lat. : 16° - 30' Long. : 121° - 40'
Alt. : 140 m

Item	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1. T _{mean} (°C)	28.4	27.9	28.0	27.6	26.8	26.1	25.1	24.4	25.0	26.1	27.3	28.3
2. RH _{mean} (%)	80	80	79	81	82	78	72	73	72	72	70	74
3. Wind Speed (km/day)	112	137	99	105	86	86	86	86	86	86	86	86
4. Dewpoint (°C)	22	22	21	21	21	20	18	19	20	21	22	22
5. Cloudiness	5	5	6	5	5	6	6	6	4	3	3	4
6. Sun shine hour (hr)												
7. e _a (mbar)	37.9	35.9	37.8	35.8	33.8	33.6	31.7	29.9	31.7	33.6	35.8	37.9
8. e _d (mbar)	30.3	28.7	29.9	29.0	27.7	26.2	22.8	21.8	22.8	24.2	25.0	28.0
9. (e _a - e _d) (mbar)	7.6	7.2	7.9	6.8	6.1	7.4	8.9	8.1	8.9	9.4	10.7	9.8
10. f(u)	0.57	0.64	0.54	0.55	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
11. (1-w)	0.22	0.23	0.23	0.22	0.23	0.25	0.26	0.25	0.26	0.25	0.24	0.23
12. (= 9 * 10 * 11) (mm/day)	0.95	1.06	0.98	0.83	0.7	0.93	1.16	1.01	1.16	1.18	1.29	1.14
13. R _a (mm/day)	15.9	15.9	15.7	15.0	13.8	12.3	11.5	11.9	13.2	14.7	15.6	16.0
14. n/N	0.45	0.45	0.3	0.45	0.45	0.3	0.3	0.3	0.55	0.65	0.65	0.55
15. R _s (mm/day)	7.55	7.55	6.28	7.13	6.56	4.92	4.6	4.76	6.93	8.45	8.97	8.4
16. R _{ns} (= 0.75 * R _s) (mm/day)	5.66	5.66	4.71	5.35	4.92	3.69	3.45	3.57	5.2	6.34	6.73	6.30
17. f(T)	16.4	16.3	16.3	16.6	16.1	15.9	15.6	15.5	15.7	15.9	16.2	16.4
18. f(ed)	0.10	0.10	0.10	0.10	0.11	0.11	0.13	0.13	0.13	0.12	0.12	0.11
19. f(n/N)	0.51	0.51	0.37	0.51	0.51	0.37	0.37	0.37	0.6	0.69	0.69	0.6
20. R _{n1} (17 * 18 * 19)	0.82	0.86	0.60	0.87	0.89	0.68	0.75	0.77	1.22	1.36	1.34	1.05
21. R _n (=16 - 20) (mm/day)	4.84	4.8	4.11	4.48	4.03	3.01	2.7	2.8	3.98	4.98	5.39	5.25
22. W * R _n (mm/day)	3.78	3.70	3.16	3.49	3.10	2.26	2.00	2.10	2.95	3.74	4.10	4.04
23. (=12 * 22) (mm/day)	4.73	4.76	4.14	4.32	3.80	3.19	3.16	3.11	4.11	4.92	5.39	5.18
Udat/Unight	1.00	1.00	1.00	1.00	1.04	1.02	1.00	1.02	1.05	1.03	1.03	1.07
Uday (m/sec)	0.6	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
24. C	1.06	1.04	1.02	1.03	1.03	1.0	0.97	1.0	1.03	1.06	1.06	1.05
25. ET _o (=23 * 24) (mm/day)	5.0	4.9	4.2	4.5	3.9	3.2	3.1	3.1	4.2	5.2	5.7	5.4

Data source : PACASA
Data Station :
Mean Temperature : Baler, Quirino, June - Sept. (1980 - 1986), Oct. - May (1977 - 1986)
Relative Humidity : Baber, Quirino, June - Sept. (1980 - 1986), Oct. - May (1977 - 1986)
Wind Speed : Tuguegarao, Cagayan, June - Sept. (1980 - 1986), Oct. - May (1977 - 1986)
Dewpoint : Tuguegarao, Cagayan, June - Sept. (1980 - 1986), Oct. - May (1977 - 1986)
Cloudiness : Tuguegarao, Cagayan, June - Sept. (1980 - 1986), Oct. - May (1951 - 1986)
Uday/Unight : Tuguegarao, Cagayan

Table J.2-1(3) Calculation of Reference Crop Evapotranspiration (ET_o) for Marangog ARC

Lat. : 10° - 26' Long. : 124° - 49'
Alt. : 150 m

Item	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1. T _{mean} (°C)	27.8	27.0	27.6	27.3	27.6	27.0	26.3	25.7	25.9	26.5	27.5	28.1
2. Rh _{mean} (%)	86	88	86	88	84	86	87	86	85	83	82	82
3. Wind Speed (km/day)	173	144	173	144	86	89	86	173	120	120	120	96
4. Dewpoint (°C)	22	22	22	22	23	23	22	22	22	23	23	24
5. Cloudiness	5	5	5	5	5	5	5	5	4	4	3	4
6. Sun shine hour (hr)												
7. ea (mbar)	35.9	35.7	35.8	35.8	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
8. ed (mbar)	30.8	31.4	30.8	31.5	30.1	30.8	31.2	30.8	30.5	29.8	29.4	29.4
9. (ea - ed) (mbar)	5.0	4.3	5.0	4.3	5.7	5.0	4.7	5.0	5.4	6.1	6.5	6.5
10. f(u)	0.74	0.66	0.74	0.66	0.50	0.51	0.50	0.74	0.59	0.59	0.59	0.53
11. (1-w)	0.23	0.24	0.23	0.23	0.23	0.24	0.25	0.25	0.25	0.25	0.24	0.23
12. (= 9 * 10 * 11) (mm/day)	0.85	0.68	0.85	0.65	0.66	0.61	0.59	0.93	0.8	0.91	0.92	0.79
13. Ra (mm/day)	15.3	15.3	15.5	15.3	14.6	13.5	12.8	13.1	14.1	15.2	15.7	15.6
14. n/N	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.55	0.55	0.65	0.55
15. Rs (mm/day)	7.27	7.27	7.36	7.27	6.94	6.41	6.08	6.22	7.4	7.98	9.02	8.19
16. Rns (= 0.75 * Rs) (mm/day)	5.45	5.45	5.52	5.45	5.21	4.81	4.56	4.67	5.55	5.99	6.77	6.14
17. f(T)	16.3	16.3	16.2	16.2	16.2	16.1	16.0	15.8	15.9	16.0	16.2	16.2
18. f(ed)	0.10	0.09	0.10	0.09	0.10	0.10	0.09	0.10	0.10	0.10	0.10	0.10
19. f(n/N)	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.6	0.6	0.69	0.6
20. Rnl (17 * 18 * 19)	0.79	0.78	0.79	0.77	0.81	0.79	0.77	0.77	0.92	0.96	1.12	0.99
21. Rn (=16 - 20)	4.66	4.67	4.73	4.68	4.4	4.02	3.79	3.9	4.63	5.03	5.64	5.15
22. W * Rn (mm/day)	3.59	3.55	3.64	3.60	3.39	3.06	2.84	2.93	3.47	3.77	4.29	3.97
23. (=12 + 22) (mm/day)	4.44	4.23	4.49	4.25	4.05	3.67	3.43	3.86	4.27	4.68	5.21	4.76
Udat/Unight	1.00	1.00	1.00	1.00	0.75	0.73	0.72	0.79	0.70	0.67	0.67	0.67
Uday (m/sec)	1.0	0.8	1.0	0.8	0.4	0.4	0.4	0.9	0.6	0.6	0.6	0.4
24. C	1.04	1.04	1.04	1.04	1.04	1.02	1.02	1.02	1.05	1.06	1.06	1.07
25. ET _o (=23 * 24) (mm/day)	4.6	4.4	4.7	4.4	4.2	3.7	3.5	3.9	4.5	5.0	5.5	5.1

Data source : PAGASA
Data Station : Tacloban, Leyte, June - Sept. (1981 - 1983), Oct. - May (1961 - 1964)
Mean Temperature : Tacloban, Leyte, June - Sept. (1981 - 1983), Oct. - May (1961 - 1964)
Relative Humidity : Maasin, Leyte, June - Sept. (1981 - 1983), Oct. - May (1981 - 1986)
Wind Speed : Maasin, Leyte, June - Sept. (1981 - 1983), Oct. - May (1981 - 1986)
Dewpoint : Maasin, Leyte, June - Sept. (1981 - 1983), Oct. - May (1981 - 1986)
Cloudiness : Maasin, Leyte, June - Sept. (1981 - 1983), Oct. - May (1981 - 1983)
Uday/Unight : Maasin, Leyte

Table J.2-1(4) Calculation of Reference Crop Evapotranspiration (ET_o) for Silae ARC

Lat. : 8° - 08' Long. : 125° - 16'
Alt. : 550 m

Item	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1. Tmean (°C)	24.6	24.1	24.1	24.2	23.9	24.2	23.7	23.2	23.2	23.9	24.8	25.3
2. Rhmean (%)	89	90	89	88	86	85	85	86	83	82	79	81
3. Wind Speed (km/day)	94	110	112	112	86	86	86	86	86	86	86	86
4. Dewpoint (°C)	22	22	22	22	20	20	19	19	19	19	19	20
5. Cloudiness	7	7	7	7	6	6	6	6	6	6	5	6
6. Sun shine hour (hr)												
7. ea (mbar)	29.9	29.8	29.8	29.8	28.3	29.8	28.2	28.1	28.1	28.3	30.0	31.8
8. ed (mbar)	26.6	26.8	26.5	26.3	24.3	25.4	24.0	24.2	23.4	23.2	23.7	25.7
9. (ea - ed) (mbar)	3.3	3.0	3.3	3.5	4.0	4.5	4.2	3.9	4.8	5.1	6.3	6.0
10. f(u)	0.52	0.57	0.57	0.57	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
11. (1-w)	0.26	0.27	0.27	0.27	0.27	0.27	0.27	0.28	0.28	0.27	0.26	0.26
12. (= 9 * 10 * 11) (mm/day)	0.45	0.46	0.51	0.55	0.54	0.61	0.57	0.55	0.67	0.69	0.82	0.79
13. Ra (mm/day)	15.0	15.1	15.4	15.3	14.8	13.9	13.3	13.6	14.5	15.3	15.6	15.3
14. n/N	0.15	0.15	0.15	0.15	0.3	0.3	0.3	0.3	0.3	0.3	0.45	0.3
15. Rs (mm/day)	4.88	4.91	5.01	4.97	5.92	5.56	5.32	5.44	5.8	6.12	7.41	6.12
16. Rns (= 0.75 * Rs) (mm/day)	3.66	3.68	3.76	3.73	4.44	4.17	3.99	4.08	4.35	4.59	5.56	4.59
17. f(T)	15.6	15.4	15.4	15.5	15.4	15.5	15.3	15.7	15.7	15.4	15.6	15.4
18. f(ed)	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.12
19. f(n/N)	0.24	0.24	0.24	0.24	0.37	0.37	0.37	0.37	0.37	0.37	0.51	0.37
20. Rni (17 * 18 * 19)	0.42	0.41	0.42	0.42	0.7	0.68	0.7	0.72	0.74	0.73	1	0.66
21. Rn (=16 - 20) (mm/day)	3.24	3.27	3.34	3.31	3.74	3.49	3.29	3.36	3.61	3.86	4.56	3.93
22. W * Rn (mm/day)	2.40	2.39	2.44	2.42	2.73	2.55	2.40	2.42	2.60	2.82	3.37	2.91
23. (=12 + 22) (mm/day)	2.85	2.85	2.95	2.97	3.27	3.16	2.97	2.97	3.27	3.51	4.19	3.70
Udat/Unight	1.00	1.00	1.00	1.00	0.73	0.68	0.71	0.63	0.64	0.59	0.61	0.65
Uday (m/sec)	0.5	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
C	1.03	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.05	1.05	1.07	1.05
24. ET _o (=23 * 24) (mm/day)	2.9	2.9	3.0	3.1	3.4	3.3	3.1	3.1	3.4	3.7	4.5	3.9

Data source : PAGASA
Data Station : Mean Temperature : Malaybalay, Bukidnon, June - Sept. (1987 - 1994), Oct. - May (1979 - 1986)
Relative Humidity : Malaybalay, Bukidnon, June - Sept. (1987 - 1994), Oct. - May (1981 - 1986)
Wind Speed : Malaybalay, Bukidnon, June - Sept. (1987 - 1994), Oct. - May (1981 - 1986)
Dewpoint : Malaybalay, Bukidnon, June - Sept. (1987 - 1994), Oct. - May (1981 - 1986)
Cloudiness : Malaybalay, Bukidnon, June - Sept. (1987 - 1994), Oct. - May (1981 - 1986)
Uday/Unight : Malaybalay, Bukidnon

Table J.2-2(1) Determination of Crop Coefficient for Garlic (Sappaac ARC)

Given :

Crop : Garlic planted in late of November, growing period of 90 days
 Climate conditions :
 Wind : Light to Moderate (0 - 5 m/sec)
 Mid-summer RH : > 70 %
 Irrigation :
 ET_o : 3.5 mm/day
 Irrigation Frequency : 7 days (assumed)

- I. Planting date : Late of October
- II. Length of growth stages :
 Initial : 20 days
 Crop development : 40
 Mid-season : 20
 Late-season : 10
- III. Plot period as indicated : refer to below Figure
- IV. K_c Value :
 K_c initial stage : K_c initial = 0.52 (refer to Figure-2)
 ET_o : 3.5 mm/day
 Irrigation frequency = 7 days
 K_c mid-season stage : K_c mid-season = 0.95 (refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
 K_c late-season stage (end) : K_c end of season = 0.75 (refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
- V. Plot K_c value and connect values with straight lines : K_c development stage = 0.35 - 0.95
 K_c late season stage = 0.95 - 0.75
- VI. Read K_c value from prepared graph for each selected period at mid-point of 30-days

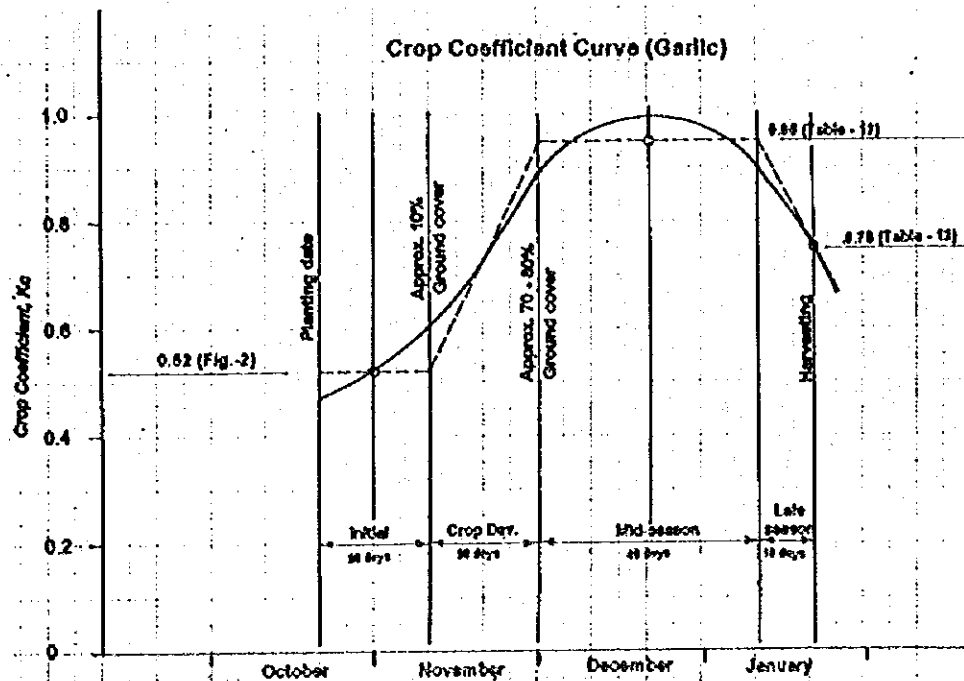


Table J.2-2(2) Determination of Crop Coefficient for Mungbean (Cofcaville ARC)

Given :

Crop : Squash planted in middle of January, growing period of 120 days
 Climate conditions
 Wind : Light to Moderate (0 - 5 m/sec)
 Mid-summer RH : > 70 %
 Irrigation
 ET_o : 3.9 mm/day
 Irrigation Frequency : 7 days (assumed)

- I. Planting date : Middle of January
- II. Length of growth stages :
 Initial : 25 days
 Crop development : 35
 Mid-season : 35
 Late-season : 25
- III. Plot period as indicated : refer to below Figure
- IV. K_c Value :
 K_c initial stage : K_c initial = 0.52 (Refer to Figure-2)
 ET_o = 3.9 mm/day
 Irrigation frequency = 7 days
 K_c mid-season stage : K_c mid-season = 0.90 (Refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
 K_c late-season stage (end) : K_c end of season = 0.70 (Refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
- V. Plot K_c value and connect values with straight lines : K_c development stage = 0.52 - 0.90
 K_c late season stage = 0.90 - 0.70
- VI. Read K_c value from prepared graph for each selected period at mid-point of 30-days

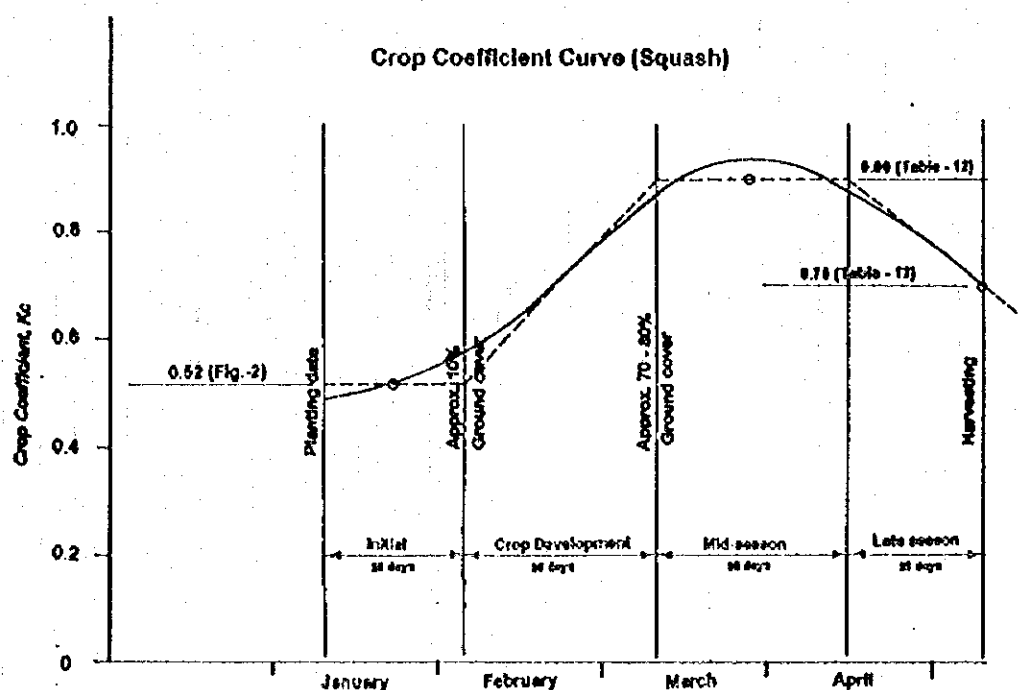


Table J.2-2(3) Determination of Crop Coefficient for Squash(Marangog ARC)

Given :

Crop : Mungbean planted in late of November, growing period of 60 days
 Climate conditions
 Wind : Light to Moderate (0 - 5 m/sec)
 Mid-summer RH : > 70 %
 Irrigation
 ETo : 3.2 mm/day
 Irrigation Frequency : 7 days (assumed)

- I. Planting date : Late of November
- II. Length of growth stages :
 - Initial : 10 days
 - Crop development : 25
 - Mid-season : 25
 - Late-season : 10
- III. Plot period as indicated : refer to below Figure
- IV. Kc Value :
 - Kc initial stage : Kc initial = 0.55 (refer ot Figure-2)
 - ETo = 3.2 mm/day
 - Irrigation frequency = 7 days
 - Kc mid-season stage : Kc mid-season = 0.95 (Refer to Table-13)
 - Wind = light/moderate
 - Humidity = high >70 %
 - Kc late-season stage (end) : Kc end of season = 0.85 (refer to Table-13)
 - Wind = light/moderate
 - Humidity = high >70 %
- V. Plot Kc value and connect values with straight lines :
 - Kc development stage = 0.55 - 0.95
 - Kc late season stage = 0.95 - 0.85
- VI. Read Kc value from prepared graph for each selected period at mid-point of 30-days

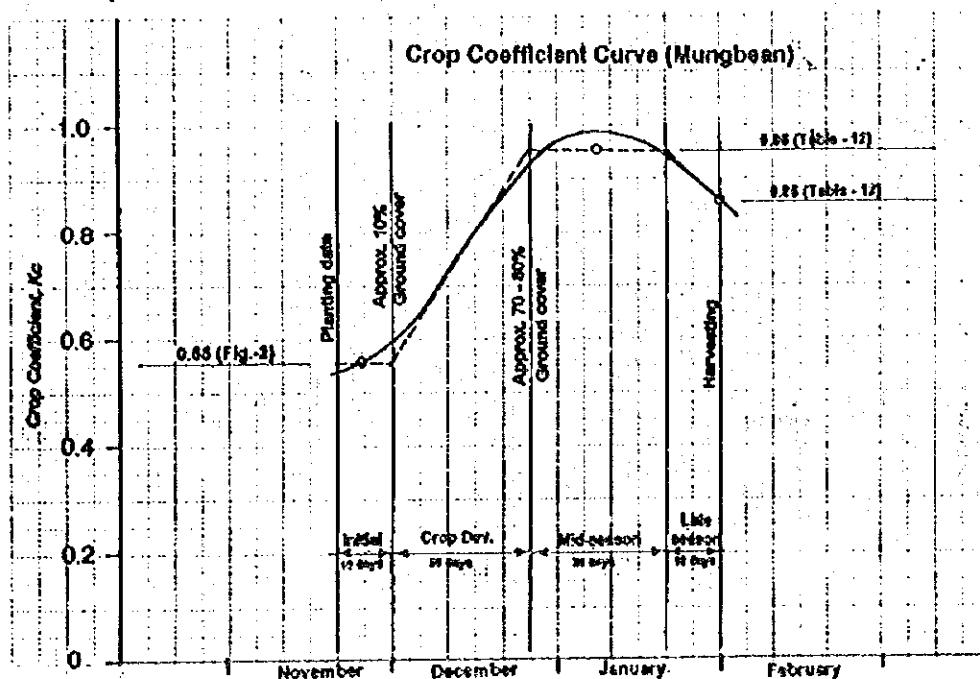


Table J.2-2(4) Determination of Crop Coefficient for Mungbean(Silae ARC)

Given :

Crop : Mungbean planted in middle of March, growing period of 60 days
 Climate conditions
 Wind : Light to Moderate (0 - 5 m/sec)
 Mid-summer RH : > 70 %
 Irrigation
 ETo : 5.2 mm/day
 Irrigation Frequency : 7 days (assumed)

- I. Planting date : Middle of March
- II. Length of growth stages :
 - Initial : 10 days
 - Crop development : 25
 - Mid-season : 25
 - Late-season : 10
- III. Plot period as indicated : refer to below Figure
- IV. Kc Value :
 - Kc initial stage : Kc initial = 0.43 (refer of Figure-2)
 ETo = 5.2 mm/day
 Irrigation frequency = 7 days
 - Kc mid-season stage : Kc mid-season = 0.95 (Refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
 - Kc late-season stage (end) : Kc end of season = 0.85 (refer to Table-13)
 Wind = light/moderate
 Humidity = high >70 %
- V. Plot Kc value and connect values with straight lines : Kc development stage = 0.43 - 0.95
 Kc late season stage = 0.95 - 0.85
- VI. Read Kc value from prepared graph for each selected period at mid-point of 30-days

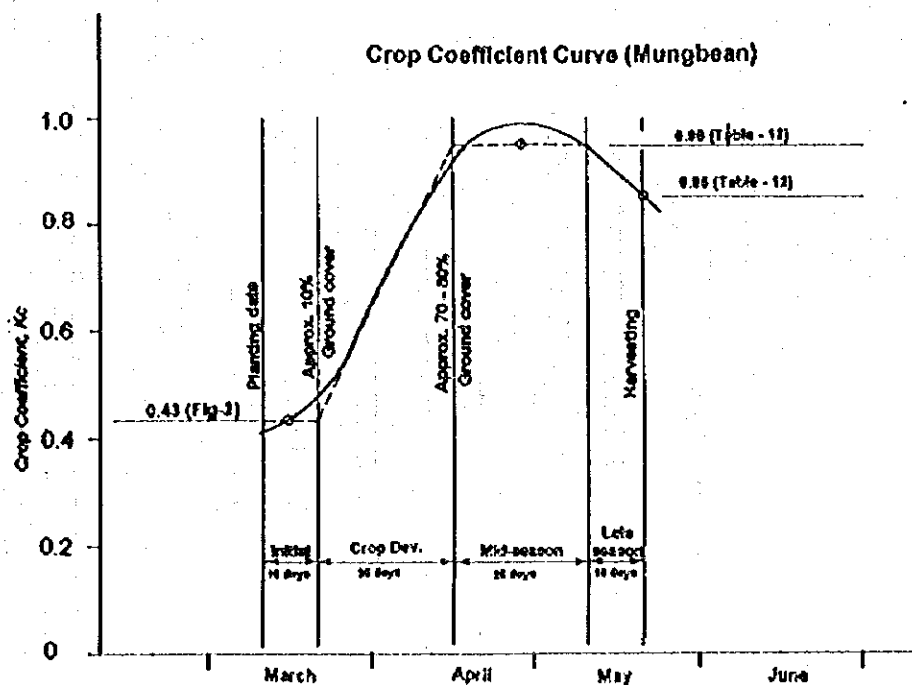


Table J2-3(1) Estimation of Irrigation Water Requirement for Sappaac Area (Without Effective Rainfall)

Derivation	January			February			March			April			May			June			July			August			September			October			November			December																																																								
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3																																																									
Proposed Cropping Pattern	Cattle																														Paddy Rice																														Cattle																													
40 % Rainfall (mm/10-days)	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																																																									
Reference Crop Evapotranspiration (mm/10-days)	37.0	37.0	40.7	42.0	42.0	42.0	37.0	37.0	40.7	42.0	42.0	37.0	37.0	40.7	42.0	42.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0																																																								
Percolation (mm/10-days)																																																																																										
Crop Coefficient, Paddy Rice (mm/10-days)																																																																																										
Crop Coefficient, Upland Crops (mm/10-days)	0.85	0.84	0.75	0.75	0.75	0.75																																																																																				
Crop Reservoir, Paddy Rice (mm/10-days)																																																																																										
Crop Reservoir, Upland Crops (mm/10-days)	35.2	31.1	30.5	31.5	31.5	31.5																																																																																				
Crop Water Requirement, Paddy Rice (mm/10-days)																																																																																										
Crop Water Requirement, Upland Crops (mm/10-days)	35.2	31.1	30.5	31.5	31.5	31.5																																																																																				
Irrigation Requirement, Paddy Rice (mm/10-days)																																																																																										
Irrigation Requirement, Upland Crops (mm/10-days)	35.2	31.1	30.5	31.5	31.5	31.5																																																																																				
Diversion Requirement, Paddy Rice (mm/10-days)																																																																																										
Diversion Requirement, Upland Crops (mm/10-days)	72.4	64.0	62.8	64.8	64.8	64.8																																																																																				
lit./ha/ha	0.84	0.74	0.76	0.76	0.76	0.76																																																																																				

Table J2-3(2) Estimation of Irrigation Water Requirement for Cofcaville Area (Without Effective Rainfall)

Description	January			February			March			April			May			June			July			August			September			October			November			December		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Proposed Cropping Pattern																																				
	Paddy Rice						Upland						Paddy Rice									Paddy Rice									Paddy Rice					
60 % Rainfall(mm/10-days)	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			
Reference Crop Evapotranspiration (mm/10-days)	31.0	31.0	34.1	42.0	42.0	38.6	52.0	52.0	57.2	57.0	57.0	57.0	54.0	54.0	54.0	50.0	50.0	50.0	49.0	49.0	49.0	42.0	42.0	46.2	45.0	45.0	45.0	39.0	42.9	37.0	37.0	37.0	31.0	31.0		
Percolation (mm/10-days)	10.0	10.0	11.0	10.0	10.0	8.0	10.0									10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	11.0		
Crop Coefficient (Paddy)	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Crop Coefficient (Upland Crop)																0.43	0.54	0.55	0.62	0.69	0.77	0.9	0.95	0.95												
Crop Evapotranspiration, Paddy (mm/10-days)	31.0	31.0	34.1	42.0	42.0	38.6	52.0						50.0	50.0	50.0	49.0	49.0	49.0	49.0	49.0	49.0	42.0	42.0	46.2	45.0	45.0	45.0	39.0	42.9	37.0	37.0	37.0	31.0	31.0		
Crop Evapotranspiration, Upland (mm/10-days)													22.4	30.8	31.4	32.4	36.4	32.4	36.4	30.5	32.5	42.5														
Crop Water Requirement, Paddy Rice(mm/10-days)	41.0	41.0	45.1	52.0	52.0	41.6	62.0						60.0	60.0	60.0	60.0	59.0	59.0	59.0	59.0	59.0	52.0	52.0	57.2	55.0	55.0	55.0	49.0	53.9	42.0	42.0	42.0	42.0	42.0		
Crop Water Requirement, Upland (mm/10-days)													22.4	30.9	31.4	32.4	36.4	32.4	36.4	30.5	32.5	42.5														
Irrigation Water Requirement, Paddy Rice(mm/10-days)	41.0	41.0	45.1	52.0	52.0	41.6	62.0						60.0	60.0	60.0	60.0	59.0	59.0	59.0	59.0	59.0	52.0	52.0	57.2	55.0	55.0	55.0	49.0	53.9	42.0	42.0	42.0	42.0	42.0		
Irrigation Water Requirement, Upland (mm/10-days)													22.4	30.9	31.4	32.4	36.4	32.4	36.4	30.5	32.5	42.5														
Diversification Requirement, Paddy Rice (mm/10-days)	72.3	72.3	79.5	91.7	91.7	73.4	109						105.8	105.8	105.8	104.1	104.1	105.8	104.1	104.1	105.8	91.7	91.7	91.7	97.0	97.0	97.0	86.4	86.4	86.4	86.4	86.4	86.4	74.1		
Diversification Requirement, Upland Crop (mm/10-days)													46.1	68.6	64.6	108	116	108	100	106	87.4	87.4														
(Lit./Acre/Year)	0.84	0.84		0.97	0.88	0.46	0.21	0.09	0.34	0.62	1.25	1.34	1.25	1.16	0.91	0.71	0.78	1.02	1.21	1.21	1.09	1.06	1.06	1.17	1.17	1.17	0.50	0.17	0.17	0.43	0.72	0.86	0.86	0.74		

Table J2-3(3)

[illegible]

Table J2-3(4) Estimation of Irrigation Water Requirement for Silae Area (Without Effective Rainfall)

Description	January	February	March	April	May	June	July	August	September	October	November	December
Proposed Cropping Pattern												
	Paddy Rice	Paddy Rice		Agulaman				Paddy Rice				Paddy Rice
80 % Rainfall (mm/10-days)	0	0	0	0	0	0	0	0	0	0	0	0
Reference Crop Evapotranspiration (mm/10-days)	31.0	31.0	34.1	34.0	27.2	37.0	37.0	40.7	45.0	45.0	39.0	42.0
Percolation (mm/10-days)	10.0	10.0	11.0	10.0	10.0	8.0	10.0					
Crop Coefficient (Paddy Rice)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(Upland Crop)												
Crop Evapotranspiration, Paddy Rice (mm/10-days)	31.0	31.0	34.1	34.0	27.2	37.0	37.0	40.7	45.0	45.0	39.0	42.0
Upland Crop (mm/10-days)												
Crop Water Requirement, Paddy Rice (mm/10-days)	41.0	41.0	45.1	44.0	35.2	47.0	47.0	50.7	55.0	55.0	49.0	52.0
Upland Crop (mm/10-days)												
Irrigation Requirement, Paddy Rice (mm/10-days)	41.0	41.0	45.1	44.0	35.2	47.0	47.0	50.7	55.0	55.0	49.0	52.0
Upland Crop (mm/10-day)												
Diversion Requirement, Paddy Rice (mm/10-days)	72.3	72.3	79.5	77.6	62.1	82.9	82.9	87.7	92.5	92.5	81.9	85.8
Upland Crop (mm/10-days)												
(lit./sec/ha)	0.44	0.44	0.48	0.46	0.35	0.47	0.47	0.51	0.55	0.55	0.49	0.52

Table J2-4(1) Estimation of Irrigation Water Requirement for Sappaac ARC (With Effective Rainfall)

Description	January			February			March			April			May			June			July			August			September			October			November			December		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Proposed Cropping Pattern																																				
Garlic																																				
80 % Rainfall (mm/10-days)	0.21	1.1	0	0	0	0																														
Reference Crop Evapotranspiration (mm/10-days)	37.0	37.0	40.7	42.0	42.0																															
Percolation (mm/10-days)																																				
Crop Coefficient, Paddy Rice (mm/10-days)																																				
Upland Crops (mm/10-days)	0.85	0.84	0.75	0.75	0.75	0.75																														
Crop Evapotranspiration, Paddy Rice (mm/10-days)	35.2	31.1	30.5	31.5	31.5																															
Upland Crops (mm/10-days)																																				
Crop Water Requirement, Paddy Rice (mm/10-days)																																				
Upland Crops (mm/10-days)	35.2	31.1	30.5	31.5	31.5																															
Irrigation Requirement, Paddy Rice (mm/10-days)																																				
Upland Crops (mm/10-days)	35.0	30.0	30.5	31.5	31.5																															
Diversion Requirement, Paddy Rice (mm/10-days)	72.0	61.7	62.8	64.8	64.8																															
Upland Crops (mm/10-days)																																				
(lit./ac/ha)	0.83	0.71	0.76	0.78	0.78	0.73																														

Table J2-4(2) Estimation of Irrigation Water Requirement for Cofcaville ARC (With Effective Rainfall)

Description	January			February			March			April			May			June			July			August			September			October			November			December			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3				
Proposed Cropping Pattern																																					
80 % Rainfall (mm/10-days)	103.4	15	65	25.9	34.3	51.9	48.6	86.1	41.2	45.2	62.2	93.4	90.1	15.7	65.4	62	37.4	68.2	115.4	33.8	22	50	27.3	114.4	104.8	44.3	229	58	68.6	139.4	141.5	40.3	83.8	85.6	45.3	75.1	
Reference Crop Evapotranspiration (mm/10-days)	31.0	31.0	34.1	42.0	42.0	53.6	52.0	57.0	57.0	57.0	57.0	57.0	54.0	54.0	50.4	50.0	50.0	49.0	49.0	49.0	49.0	42.0	42.0	46.2	45.0	45.0	45.0	39.0	39.0	42.9	32.0	32.0	32.0	32.0	31.0	31.0	
Percolation (mm/10-days)	10.0	10.0	11.0	10.0	10.0	8.0	10.0										10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	11.0	
Crop Coefficient (Paddy)	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Crop Coefficient (Upland Crop)								0.40	0.54	0.55	0.62	0.69	0.67	0.9	0.85	0.85																					
Crop Evapotranspiration, Paddy (mm/10-days)	31.0	31.0	34.1	42.0	42.0	53.6	52.0										50.0	50.0	50.0	49.0	49.0	49.0	42.0	42.0	46.2	45.0	45.0	45.0	39.0	39.0	42.9	32.0	32.0	32.0	32.0	31.0	31.0
Crop Evapotranspiration, Upland (mm/10-days)								22.4	30.9	31.4	32.4	36.4	32.4	48.6	50.5	42.5	42.5																				
Crop Water Requirement, Paddy Rice (mm/10-days)	41.0	41.0	45.1	52.0	52.0	61.6	62.0										60.0	60.0	60.0	59.0	59.0	59.0	52.0	52.0	57.2	55.0	55.0	55.0	49.0	49.0	53.9	42.0	42.0	42.0	42.0	42.0	42.0
Crop Water Requirement, Upland (mm/10-days)								22.4	30.9	31.4	32.4	36.4	32.4	48.6	50.5	42.5	42.5																				
Irrigation Water Requirement, Paddy Rice (mm/10-days)	0.0	26.0	0.0	26.1	17.7	0.0	13.4										0.0	27.6	0.0	0.0	25.2	38.0	0.0	24.7	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Water Requirement, Upland (mm/10-days)								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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diversion Requirement, Paddy Rice (mm/10-days)	0	45.9	0	46	31.2	0	23.6										0.0	48.7	0.0	0.0	44.4	67.0	0.0	43.6	0.0	0.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diversion Requirement, Upland Crop (mm/10-days)								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
(lit./ha/cr/ha)	0.00	0.53	0.00	0.48	0.30	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.30	0.79	0.00	0.00	0.04	0.00	0.00	0.51	0.71	0.00	0.51	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table J2-4(3) Estimation of Irrigation Water Requirement for Marangog ARC (With Effective Rainfall)

Description	January			February			March			April			May			June			July			August			September			October			November		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Proposed Cropping Pattern																																	
80 % Rainfall (mm/10-days)	61.5	37.8	37.1	23.1	26.6	45.4	27.2	53.6	18.5	26.3	21.2	36.1	39.9	10.2	23.6	35.9	24.3	69.2	45.8	42	48.3	7.1	100.9	55.2	27	49.2	18.4	23.9					
Reference Crop Evapotranspiration (mm/10-days)	39.0	42.9	45.0	45.0	36.0	50.0	55.0	55.0	55.0	55.0	55.0	51.0	51.0	56.1	46.0	46.0	46.0	44.0	44.0	48.4	47.0	47.0	51.7	44.0	44.0	44.0	42.0	42.0					
Perculation (mm/10-days)															10.0	10.0	10.0	10.0	10.0	11.0	10.0	10.0	10.0	11.0	10.0	10.0	10.0	10.0	10.0				
Crop Coefficient, Paddy Rice (mm/10-days)															1.00	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0				
Upland Crop (mm/10-days)															0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70				
Crop Evapotranspiration, Paddy Rice (mm/10-days)															46.0	46.0	46.0	46.0	46.0	48.4	47.0	47.0	51.7	44.0	44.0	44.0	42.0	42.0					
Upland Crop (mm/10-days)															32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2				
Crop Water Requirement, Paddy Rice (mm/10-days)															56.0	56.0	56.0	56.0	56.0	59.4	57.0	57.0	62.7	54.0	54.0	54.0	52.0	52.0					
Upland Crop (mm/10-days)															26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4				
Irrigation Requirement, Paddy Rice (mm/10-days)															26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4				
Upland Crop (mm/10-days)															2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8				
Diversions Requirement, Paddy Rice (mm/10-days)															46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6	46.6				
Upland Crop (mm/10-days)															5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3				
(lit./sec/ha)	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table J2-4(4) Estimation of Irrigation Water Requirement for Silae ARC (With Effective Rainfall)

Derivation	January	February	March	April	May	June	July	August	September	October	November	December																									
Proposed Cropping Pattern																																					
	Paddy Rice	Paddy Rice	Mungbean	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice	Paddy Rice																									
80 % Rainfall (mm/10-days)	30.7	21.2	15.7	48	60.7	11.2	24.0	115.8	56.6	20.5	24.4	25.5	23.1	73.7	40.1	69.7	36.7	105.5	108	66.2	39.8	34.5	77.4	69.4	139.3	73.3	41.2	76.3	87.3	68	19.1	46.6	45	66.1	30.4	55.9	
Reference Crop Evapotranspiration (mm/10-days)	31.0	31.0	24.1	34.0	24.0	27.2	37.0	37.0	40.7	45.0	45.0	45.0	39.0	39.0	42.8	29.0	29.0	29.0	29.0	29.0	29.0	31.0	31.0	31.0	31.0	31.0	31.0	34.0	34.0	37.4	39.0	39.0	39.0	31.0	31.0	34.1	
Perculation (mm/10-days)	10.0	10.0	11.0	10.0	10.0	8.0	10.0									10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	11.0
Crop Coefficient (Paddy Rice)	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
(Upland Crop)																																					
Crop Evapotranspiration, Paddy Rice(mm/10-days)	31.0	31.0	34.1	34.0	34.0	27.2	37.0									29.0	29.0	29.0	29.0	29.0	29.0	31.0	31.0	31.0	31.0	31.0	31.0	34.0	34.0	37.4	39.0	39.0	31.0	31.0	34.1		
Upland Crop (mm/10-days)																29.0	29.0	29.0	29.0	29.0	29.0	31.0	31.0	31.0	31.0	31.0	31.0	34.0	34.0	37.4	39.0	39.0	31.0	31.0	34.1		
Crop Water Requirement, Paddy Rice(mm/10-days)	41.0	41.0	45.1	44.0	44.0	35.2	47.0									29.0	29.0	29.0	29.0	29.0	29.0	44.0	41.0	41.0	41.0	41.0	41.0	44.0	44.0	46.4	49.0	49.0	41.0	41.0	45.1		
Upland Crop (mm/10-days)																29.0	29.0	29.0	29.0	29.0	29.0	44.0	41.0	41.0	41.0	41.0	41.0	44.0	44.0	46.4	49.0	49.0	41.0	41.0	45.1		
Irrigation Requirement, Paddy Rice(mm/10-days)	10.3	19.8	29.4	0.0	0.0	24.0	8.1									0.0	2.3	0.0	0.0	0.0	0.0	3.1	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	0.0	0.0	0.0	10.6	0.0	
Upland Crop (mm/10-days)																0.0	0.0	13.3	17.0	19.1	15.1	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	
Diversion Requirement, Paddy Rice (mm/10-days)	18.2	24.9	51.9	0.0	0.0	42.3	14.3									0.0	0.0	27.4	35.0	39.3	31.1	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	
Upland Crop (mm/10-days)																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	
(Lit./hec/hr)	0.21	0.40	0.55	0.00	0.00	0.31	0.03	0.26	0.41	0.46	0.36	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.06	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table J.2-5(1) Reservoir Operation Study for Sappaac ARC

Irrigated Area Paddy : 30 ha
Upland : 6 ha (Garlic)

Month	Inflow			Outflow					Effect. Storage (10) = (10) - (3-9)	Water Level (11)	Spillage (12)	Shortage (13)
	Direct Inflow (1)	Diverted Flow (2)	Total (3) = (1) + (2)	Diversion Requirement (4)	Paddy Rice (5)	Upland Crop (6)	Irrigation Requirement (7) = (4) * (5+6)	Reservoir Losses (8)				
	(cu. m/day)	(cu. m/day)	(cu. m/day)	(lit./sec/ha)	(ha)	(ha)	(cu. m/day)	(cu. m/day)	(cu. m/day)	(EL-m)	(cu. m/day)	(cu. m/day)
June-1	2,094	1,642	3,736	0	30		0	16	3,166	223.0	3,720	0
-2	991	1,642	2,633	0	30		0	16	3,166		2,617	0
-3	546	1,642	2,188	0	30		0	16	3,166		2,172	0
July-1	540	1,642	2,182	0	30		0	16	3,166		2,167	0
-2	1,307	1,642	2,949	0	30		0	16	3,166		2,933	0
-3	571	1,642	2,213	0	30		0	16	3,166		2,197	0
Aug-1	612	1,642	2,254	0	30		0	16	3,166		2,238	0
-2	65	1,642	1,707	0.67	30		1,737	16	3,120		0	-46
-3	191	1,642	1,833	0.26	30		874	16	3,166		1,097	0
Sept-1	980	1,642	2,622	0	30		0	16	3,166		2,606	0
-2	813	1,642	2,455	0	30		0	16	3,166		2,439	0
-3	291	1,642	1,933	0	30		0	16	3,166		1,917	0
Oct-1	206	1,642	1,848	0.07	30		181	16	3,166		1,651	0
-2	49	1,642	1,691	0.12	30		311	16	3,166		1,364	0
-3	18	1,642	1,660	0.06		6	31	16	3,166		1,613	0
Nov-1	12	1,230	1,251	0.06		6	31	16	3,166		1,204	0
-2	0	836	836	0.09		6	47	16	3,166		774	0
-3	0	432	432	0.11		6	57	16	3,166		359	0
Dec-1	0	432	432	0.12		6	62	16	3,166		354	0
-2	73	432	505	0.12		6	62	16	3,166		427	0
-3	0	432	432	0.14		6	73	16	3,166		344	0
Jan-1	1	432	433	0.83		6	430	16	3,153		0	-13
-2	4	432	436	0.71		6	368	16	3,166		40	0
-3	17	432	449	0.76		6	394	16	3,166		39	0
Feb-1	0	432	432	0.38		6	197	16	3,166		219	0
-2	0	432	432	0.13		6	67	16	3,166		349	0
-3	0	432	432				0	16	3,166		416	0
Mar-1	26	432	458				0	16	3,166		443	0
-2	0	432	432				0	16	3,166		416	0
-3	0	432	432				0	16	3,166		416	0
Apr-1	19	432	451				0	16	3,166		435	0
-2	7	432	439				0	16	3,166		423	0
-3	16	432	448				0	16	3,166		433	0
May-1	0	836	836				0	16	3,166		820	0
-2	92	1,239	1,331				0	16	3,166		1,216	0
-3	694	1,642	2,336				0	16	3,166		2,320	0

Table J.2-5(2) Reservoir Operation Study for Cotacaville ARC

Irrigated Area Paddy(1) : 6 ha
Paddy(2) : 7 ha
Upland : 6 ha (Mungbean)

Month	Inflow			Diversion Requirement (4)	Outflow			Reservoir Losses (8)	Total (9)=(7)+(8)	Effect. Storage (10)=(9)-(13-9)	Water Level (11)	Spillage (12)	Shortage (13)
	Direct Inflow (1)	Diverted Flow (2)	Total (3)=(1)+(2)		Paddy Rice (5)	Upland Crop (6)	Irrigation Requirement (7)=(4)+(5)+(6)						
	(cu. m/day)	(cu. m/day)	(cu. m/day)	(lit./sec/ha)	(ha)	(ha)	(cu. m/day)	(cu. m/day)	(cu. m/day)	(cu. m/day)	(EL-m)	(cu. m/day)	(cu. m/day)
June-1	388	216	604	0	6	6	0	12	12	2,400		2,992	0
-2	56	216	272	0.04	6	6	41	12	53	2,400		2,619	0
-3	244	216	460	0.00	6	6	0	12	12	2,400		2,848	0
July-1	97	216	313	0	6	6	0	12	12	2,400		2,701	0
-2	129	216	345	0.51	6	6	264	12	276	2,400		2,468	0
-3	195	216	411	0.71	6	6	368	12	380	2,400		2,431	0
Aug-1	182	216	398	0	6	6	0	12	12	2,400		2,786	0
-2	323	216	539	0.51	6	6	264	12	276	2,400		2,663	0
-3	155	216	371	0	6	6	0	12	12	2,400		2,759	0
Sept-1	170	216	386	0	6	6	0	12	12	2,400		2,774	0
-2	233	216	449	0.22	6	6	114	12	126	2,400		2,723	0
-3	350	216	566	0	6	6	0	12	12	2,400		2,954	0
Oct-1	328	216	544	0	6	6	0	12	12	2,400		2,942	0
-2	59	216	275	0	6	6	0	12	12	2,400		2,663	0
-3	245	216	461	0	7	7	0	12	12	2,400		2,849	0
Nov-1	233	216	449	0	7	7	0	12	12	2,400		2,837	0
-2	122	216	338	0	7	7	0	12	12	2,400		2,726	0
-3	256	216	472	0	7	7	0	12	12	2,400		2,860	0
Dec-1	433	216	649	0	7	7	0	12	12	2,400		3,037	0
-2	127	216	343	0	7	7	0	12	12	2,400		2,731	0
-3	83	216	299	0	7	7	0	12	12	2,400		2,647	0
Jan-1	199	216	415	0	7	7	0	12	12	2,400		2,803	0
-2	102	216	318	0.53	7	7	321	12	333	2,386		0	-14
-3	429	216	645	0	7	7	0	12	12	2,400		3,019	0
Feb-1	393	216	609	0.48	7	7	290	12	302	2,400		2,707	0
-2	166	216	382	0.30	7	7	181	12	193	2,400		2,589	0
-3	859	216	1,075	0	7	7	0	12	12	2,400		3,463	0
Mar-1	218	216	434	0.05	7	7	30	12	42	2,400		2,791	0
-2	239	216	455	0	6	6	0	12	12	2,400		2,843	0
-3	598	216	814	0	6	6	0	12	12	2,400		3,202	0
Apr-1	532	216	748	0	6	6	0	12	12	2,400		3,136	0
-2	162	216	378	0	6	6	0	12	12	2,400		2,766	0
-3	314	216	530	0	6	6	0	12	12	2,400		2,918	0
May-1	321	216	537	0	6	6	0	12	12	2,400		2,925	0
-2	170	216	386	0.78	6	6	404	12	416	2,370		0	-30
-3	282	216	498	0	6	6	0	12	12	2,400		2,855	0

Table J.2-5(3) Reservoir Operation Study for Silae ARC

Irrigated Area Paddy(1) 30 ha
 Paddy(2) 12 ha
 Upland : 14 ha (Mungbean)

Month	Inflow			Diversion Requirement (4) (lit./sec/ha)	Outflow			Irrigation Requirement (7)=(4)*(5+6) (cu. m/day)	Reservoir Losses (8) (cu. m/day)	Total (9)=(7)+(8) (cu. m/day)	Storage (10)=(9)-(3-9) (cu. m/day)	Water Level (11) (EL-m)	Spillage (12) (cu. m/day)	Shortage (13) (cu. m/day)
	Direct Inflow (1) (cu. m/day)	Diverted Flow (2) (cu. m/day)	Total (3)=(1+2) (cu. m/day)		Irrigation Area		Upward Crop (6) (ha)							
					Paddy Rice (5) (ha)									
June-1	0	1,123	1,123	0	30	14	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0.04	30	14	152	152	6	158	2,900		965	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
July-1	0	1,123	1,123	0.00	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0.00	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0.06	30	0	156	156	6	161	2,900		962	0
Aug-1	0	1,123	1,123	0.11	30	0	285	285	6	291	2,900		832	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
Sept-1	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
Oct-1	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
	0	1,123	1,123	0	30	0	0	0	6	6	2,900		1,117	0
Nov-1	0	1,123	1,123	0	12	0	0	0	6	6	2,900		1,117	0
	0	936	936	0.24	12	0	249	249	6	255	2,900		681	0
	0	749	749	0	12	0	0	0	6	6	2,900		743	0
Dec-1	0	562	562	0	12	0	0	0	6	6	2,900		556	0
	0	562	562	0	12	0	0	0	6	6	2,900		556	0
	0	562	562	0.2	12	0	207	207	6	213	2,900		349	0
Jan-1	0	562	562	0	12	0	0	0	6	6	2,900		556	0
	0	562	562	0.21	12	0	218	218	6	224	2,900		338	0
	0	562	562	0.40	12	0	415	415	6	421	2,900		141	0
Feb-1	0	562	562	0.55	12	0	570	570	6	576	2,886		0	-14
	0	562	562	0.00	12	0	0	0	6	6	2,900		542	0
	0	562	562	0	12	0	0	0	6	6	2,900		556	0
Mar-1	0	562	562	0.31	12	0	321	321	6	327	2,900		235	0
	0	562	562	0.03	12	0	31	31	6	37	2,900		525	0
	0	562	562	0	0	14	0	0	6	6	2,900		556	0
Apr-1	0	562	562	0	0	14	0	0	6	6	2,900		556	0
	0	562	562	0.26	0	14	314	314	6	320	2,900		242	0
	0	562	562	0.04	0	14	48	48	6	54	2,900		508	0
May-1	0	562	562	0.46	0	14	556	556	6	562	2,900		0	0
	0	749	749	0.36	0	14	435	435	6	441	2,900		308	0
	0	936	936	0	0	14	0	0	6	6	2,900		930	0
-3	0	1,123	1,123	0	0	14	0	0	6	6	2,900		1,117	0

ANNEX K. POST-HARVEST AND RURAL AGRO-INDUSTRY

K.1 Post-Harvest and Rural Agro-Industry

List of Tables

Table K.1-1	Existing Equipment and Facilities in the Marginal Areas
Table K.1-2	Equipment and Facilities Initially Conceived in the Study Areas
Table K.1-3	Present Loan Program and Lending Activity
Table K.1-4	Phil Rice Training Courses, Workshops, Seminars and Conference, 1994
Table K.1-5	Selection Criteria for Post-Harvest and Agro-Industry facilities
Table K.1-6	Scale of Post-Harvest Facilities under Government programs
Table K.1-7	Proposed Scale of Post-Harvest and Agro-Industry Facilities
Table K.1-8	Proposed Post-Harvest and Agro-Industry Plan

List of Figures

Figure K.1-1	General Plan of Multi-Purpose Dryer
Figure K.1-2	General Plan of Rice or Corn Agro-Industry Center

K.2 Feasibility Study

List of Tables

Table K.2-1	Present Family Working Status
Table K.2-2	Inventory of Post-Harvest, Agro-Industry and Others
Table K.2-3	Present Transportation Status and Marketing Practice
Table K.2-4	Willingness and Skill of Rural Industry/Handicraft (out of 50 Persons)
Table K.2-5	Comparison of Crops and Crop Production without and With Project (Sappaac ARC)
Table K.2-6	Comparison of Crops Crop Production Without and With Project (Cofcaville ARC)
Table K.2-7	Comparison of Crop and Crop Production Without and With Project (Marangog ARC)
Table K.2-8	Comparison of Crops and Crop Production Without and With Project (Silae ARC)
Table K.2-9	Proposed Post-Harvest and Agro-Industry Plan
Table K.2-10	Estimated Price for Post-Harvest and Agro-Industry Facilities
Table K.2-11	Durable Year and O&M Cost of Post-Harvest and Agro-Industry Facilities
Table K.2-12	Investment and O&M Cost of Post-Harvest and Agro-Industry Facilities
Table K.2-13	Estimated Benefits from Distribution of Post-Harvest and Agro-Industry

	Facilities (Sappac ARC)
Table K.2-14	Estimated Benefits from Distribution of Post-Harvest and Agro-Industry Facilities (Cofcaville ARC)
Table K.2-15	Estimated Benefits from Distribution of Post-Harvest and Agro-Industry Facilities (Marangog ARC)
Table K.2-16	Estimated Benefits from Distribution of Post-Harvest and Agro-Industry Facilities (Silae ARC)
Table K.2-17	Ownership and Person in Charge for Implemented Equipment and Facilities
Table K.2-18	DTI-CARP Inventory of CSF/AIP Project

List of Figures

Figure K.2-1	Proposed Plan of Multi-Purpose Dryer
Figure k.2-2	Propose plan of Rice or Corn Agro-Industry Center
Figure K.2-3	Flow Chart for Guideline of Post -Harvest Development Plan
Figure k.2-4	Flow Chart for Guideline of Agro-Industry development Plan

Table K.1-1 Existing Equipment and Facilities in the Marginal Area

	Reg. CAR	Reg. I La Union	Reg. II Quirino	Reg. III Bataan	Reg. IV Quezon	Reg. V Camarines Sur	Reg. VI Aklan	Reg. VII Bohol	Reg. VIII Leyte	Reg. X Bukidnon	Reg. XI Davao	Reg. XIII Surigao Del Norte
	Bangued	San Juan	Maddela	Tuyo	Balanga	Calang	Abler	San Vicente	Marangoc	Silac	Asuncion	Surigao City
	Sapaga	Talolong	Cofabille	Montilla	Maulawin	Pao-Asa	Abler	San Vicente	Marangoc	Silac	Asuncion	Surigao City
1. Agricultural Facilities												
(1) Tractor	-	2*	-	-	-	-	1*	-	-	-	-	-
(2) Hand Tractor	-	1*	-	-	-	-	-	-	-	-	-	-
(3) Irrigation Pump	-	1*	-	-	-	-	-	-	-	-	-	-
(4) Sprayer	-	-	1*	-	-	-	-	-	-	-	-	-
2. Post Harvest Facilities												
(1) Multi-Purpose Pavement (MPP)	-	1	1	-	1	1	-	-	1	-	-	-
(2) Mechanical Dryer	-	1*	-	-	-	-	-	-	-	-	-	-
(3) Reaper	-	Many	-	-	-	-	-	-	-	-	-	-
(4) Rice Thresher (Foot Type)	-	1*	-	-	-	-	-	-	-	-	1*	-
(5) Rice Thresher (w/Prime Mover)	-	-	-	-	-	-	-	-	-	-	-	-
(6) Winnow	-	-	-	-	-	-	-	-	-	-	-	-
(7) Rice Mill (One pass type)	2*	1*	-	-	-	1	-	-	-	-	1*	-
(8) Corn Sheller (Handy type)	-	-	-	-	-	-	-	-	-	-	-	-
(9) Corn Sheller (w/ Prime Mover)	-	-	1*	-	-	-	-	-	-	-	-	-
(10) Corn Mill	-	-	-	-	-	-	-	-	-	-	-	-
(11) Warehouse	-	-	-	-	-	-	1	-	-	-	-	-
(12) Citrus Processing Plant	-	-	-	-	-	-	-	-	-	-	-	-
(13) Weighing Machine	-	-	-	-	-	-	-	-	-	-	-	-
(14) Cassava Grater	-	-	-	-	-	-	-	-	-	-	-	-
(15) Truck	-	-	-	-	-	-	-	-	-	-	-	-
(16) Oil Mill	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: 1. - = Not available

2. * = Private Own.

Source: Survey of This Study Team

Table K.1-2 Equipment and Facilities Initially Conceived in the Study Area

Study Areas	Equipment and Facilities Conceived	Location	Crops
Reg. CAR Abra Bangued Sappa-ac	MPP(10x20m) 5sets, Rice Mill, Corn Mill, Corn Shelter Rice Thresher(foot type) 1unit for each 2-3H.M.	Sappa-ac Proper	Rice Corn
Reg. I La Union San Juan Taluglog	MPP(8x10m), Rice Thresher, Tractor	Sito 1	Rice Mango
Reg. II Quirino Madella Cofcaville	MPP(15x30m), Tractor, Corn Shelter, Corn Mill	Proper	Corn Rice
Reg. III Bataan Tuyo, Balanga Montilla	Warehouse, Tractor	Proper	Rootcrop Squash Cassava
Reg. IV Quezon Calauag Maulawin	Rice Mill, Warehouse, Processing Plant	Centro Tigas	Rice Citrus
Reg. V Cam. Sur Tinambac Pag-asa	Micromill, Thresher 5units, Corn Thresher 5units, Sprayer 10units, Solar Dryer(15x30m), Mechanical Dryer, Weighing Scale, Cassava Grater, 5t Truck, Mini-oil Mill, Warehouse (15x30m)	Proper	Rice Corn Coconut
Reg. VI Aklan Atavas Avierra	MPP, Mechanical Dryer, Thresher, Warehouse Copra Dryer	Itk Cabangahan	Rice Corn Coconut
Reg. VII Bohol Trinidad San Vicente	Rice & Corn Mill	Fatima	Rice Corn
Reg. VIII Leyte Hilongos Marangog	Tractor, MPP, Mechanical Dryer, Rice Mill, Warehouse Corn Shelter(handy type) 10units, Corn Mill	Proper	Rice Corn
Reg. X Bukidnon Malaygalay Silae	Warehouse, Rice & Corn Mill, Corn Shelter	Silae Dalacutan	Rice Corn
Reg. XI Davao Asuncion Kipahil	MPP 3 sets, Reaper, Rice Mill	Puruk 4 Puruk 8 Puruk 9	Rice
Reg. XIII Suri. del Norte Surigao City Mat i	Rice Thresher	Proper	Rice

Source: Survey of This Study Team

Table K.1-3 Present Loan Program & Lending Activity (1)

Type/Title	Loan/Purpose/Terms	Beneficiaries	Loan Value	Interest	Collateral
I. QUEDANCOR					
1. Credit Guarantee Program	Procurement, processing and distribution of grains and agri-aqua produce. 60, 90, 120 or 180 days.	Farmer-group Grain miller Food processor	85% of face value	Lower than commercial bank	Commodity
(1) Agri-Aqua Inventory Management (AIM)					
(2) Coordinated Agricultural Marketing & Production (CAMP)	Integrated production, processing, marketing agri-business. Monthly, quarterly or semi-annually. Max. 5 years.	Farmer, Corp. Sole proprietor Partnership, Corp.	P2M to P10M	14-18%	Real estate/ Chattels/ Co-makers
(3) Farm Level Agri-Machineries & Equipment (FLAME)	Farm production & post-production machineries, equipment and facilities. Monthly, quarterly or semi-annually. Max. 5 years.	Farmer, Corp. Sole proprietor Partnership, Corp.	P2M to P10M	14-18%	Real estate/ Chattels/ Co-makers
(4) Livelihood & Aqua Marine Productivity (LAMP)	Land-based livelihood & aqua-culture project. Monthly, quarterly or semi-annually. Max. 5 years.	Fisherfolk or their family members	P5M	14-18%	Real estate/ Chattels/ Co-makers
2. Guaranteed Co-financing Programs					
(5) Food & Agricultural Retail Enterprises (FARE)	Retailing of food and agri-related commodities. Weekly, monthly or quarterly. Max. 360 days.	Public market vendors	Individual: P5,000 - P50,000 Group: P10,000 - P100,000 P2M to P10M	14-18%	Trust receipt/ Co-makers Stock share Real estate/ Chattels/ Co-makers
(6) Coordinated Agricultural Marketing & Production (CAMP)	Integrated production, processing, marketing agri-business. Monthly, quarterly or semi-annually. Max. 2 years.	Farmer, Coop. Sole proprietor Partnership, Corp.	P2M to P10M	14-18%	Real estate/ Chattels/ Co-makers
(7) Farm Level Agri-Machineries & Equipment (FLAME)	Farm production & post production machineries, equipment and facilities. Monthly, quarterly or semi-annually. Max. 2 years.	Farmer, Coop. Sole proprietor Partnership, Corp.	P2M to P10M	14-18%	Real estate/ Chattels/ Co-makers
(8) Livelihood & Aqua Marine Productivity (LAMP)	Land-based livelihood & aqua-culture project. Monthly, quarterly or semi-annually. Max. 5 years.	Fisherfolk or their family members	P5M	14-18%	Real estate/ Chattels/ Co-makers
3. Special On-Lending Programs					
(9) CARP-Barangay Marketing Center (CARP-BMC) = (CBMC)	Farm-level warehouse with solar dryer. Semi-annually starting second year. 5 years.	Agrarian reform beneficiaries	Warehouse P70,000 Marketing P150,000 Inventory: 85% Rice Mill P150,000	12% 12% prefer 12%	Estate In loan Inventory Chattel
(10) Farm Level Grains Center I (FLGC I)	Farm-level warehouse with solar dryer. Semi-annually starting second year. 5 years.	Primary cooperative	Warehouse P70,000 Marketing P150,000 Inventory: 85%	12% 12% prefer	Estate In loan Inventory
(11) Development Assistance Program for Cooperatives and People's Organization (DAPCOPO)	Agricultural cooperative enterprises. Quarterly, semi-annually or annually. Max. 5 years.	Coop federations Primaries	Repayment capacity	6-8%	Signatures of three Board Members
(12) Grains Production Enhancement Program- Cooperative Credit Assistance Program (GPEP-CCAP)	Agricultural cooperative enterprises. Semi-annually. Max. 5 years	Coop federations Primaries	P10M	Coop: less 6% Individual: not more 9%	Deposit/ risk free asset
II. NFA					
(1) Farm Level Grains Center III (FLGC III)	Establishment of farm-level warehouse with small office, farmer's shed, post-harvest facilities and ancillary components.	managed by valuable farmer group	Established by NFA		
(2) Municipal Level Grains Center (MLGC)	Establishment of warehouse with solar dryer.	managed by LGU	Established by NFA		
(3) NFA-JICA Post-Harvest Facilities Assistance Program	Establishment and/or supply of post-harvest facilities.	Farmer-organization Agri-business firms/coop.	Supply at the original prices of facilities.		

Source: Quedan and rural Credit Guarantee Corporation
National Food Authority

Table K.1-3 Present Loan Program & Lending Activity (2)

Type/Title	Loan/Purpose/Terms	Beneficiaries	Loan Value	Interest	Collateral
III. LBP					
1. LBP-PAG-IBIG Tie-up Program	Promote small business/livelihood ventures and income-generating project Monthly.	Pag-ibig fund member who organize into coop	P75,000	16%	70-90%
2. General Lending Projects					
(1) Short-Term					
a Crop and Livestock Production	Maturity: One crop cycle.	Small farmers Small Fishermen Cooperatives		Production/One-rating capital: 12%	Production= PN/TRs PCIC- Insurance/ Guarantee
b. Operating Capital		Small hog/poultry/ livestock raisers	Single: P150,000		Fixed Asset= Financing/ Chattels/ REMs
1) Quedan Financing	Refer to QUEDANCOR lending scheme.				
2) Commodity Loans	Maturity: 6 months.				
3) Working Capital	Maturity: 1 year.				
(2) Medium/Long-Term					
a Crop and Livestock Production	Maturity: 2 years.	Small farmers Small Fishermen Cooperatives		Fixed asset/ Medium & long term loan: 16%	Capital= Stocks/ REMs/ Chattels
b Fixed Asset		Small hog/poultry/ livestock raisers			
1) Sprayers, Weeders	Maturity: 3 years.				
2) Power Tiller, Irrigation Pump, Portable Threshers	Maturity: 4 years				
3) Hauling Trucks	Maturity: 5 years				Commodity= Chattel of stocks
4) 4-Wheel Tractors	Maturity: 7 years.				
5) Rice Mill, Warehouse	Maturity: 10 years.				
c Cottage (Small and Medium Scale Industries)					
d Irrigation Facilities					
e Income Generating Project					
3. Other Acceptance Guarantees					
(1) Quedan Guarantee					
(2) PCIC-CALF Guarantee Program					
(3) GFSME Guarantee					
4. Other Support Services					
(1) Coop Organization and Development					
(2) Institutional Capability Strengthening (e.g. Coop Training)					
(3) Marketing Assistance					
(4) Technical Assistance					
5. Major Tie-up Programs					
(1) Fishery Sector Program (LBP-ACPC-PCIC)					
(2) Program for Cotton Production (LBP-DA-PCC-CRDI)					
(3) Integrated Social Forestry Program (LBP-DENR)					
(4) Irrigation Pump Acquisition Program (LBP-NIA)					
(5) Program for Tobacco Production (LBP-NTA)					
(6) Financial Incentives for Economic Livelihood Small coconut FOs (LBP-PCA)					
(7) Joint Assistance Program for Farmers and Family (LBP-DOST)					
(8) Small and Medium Industrial Technology Transfer Development Program (LBP-DTI)					
(9) Production of Certified Palay Seeds (LBP-DA-MAPF-PCIC)					
6. Farmer-Friendly Loan Packages	Institutional strengthening component Program assistance in shifting to high value crops.	Cooperatives of COA		10-12%	No colla- teral

Source: Land Bank of the Philippines

Table K.1-4 PhilRice Training Courses, Workshops, Seminars and Conferences, 1994

Items	Number of Batches (days)	Number of Participants	Total Man-days	Remarks
1. Season-long Rice Specialist' Training Course on IPM*	2 (121)	60	7,260	Collaborated with the National IPM Program
2. Season-long Rice IPM Farmers' Field Schools*	2 (16)	263	4,208	Collaborated with the National IPM Program
3. Seed Growers' Training Courses	7 (3)	218	654	Requested by coops
4. Seminar-Workshop on Technical Writing	1 (3)	25	75	Coordinated by Comm. Division for PhilRice researchers
5. Pre-departure Orientation Course on Farm Mechanization	1 (3)	15	75	Cosponsored with NAFC
6. Technical Briefing for Seed Inspectors	1 (3)	30	90	Requested by BPI/ATI (Camarines Sur)
7. Technical Briefings on Rice/ Rice Seed Production for Farmers/Famer-Leaders/ Technicians and LGU officials	58 (1)	1,524	1,524	Requested by LGUs, NGOs and coops
8. Technical Briefings on IPM for Trainors/LGU Technicians/Farmers	35 (1)	1,575	1,575	Requested by IPM Training Operation Teams and Farmers' Field Schools
9. Briefings on Technology Transfer/R&D Networking for researchers and planners	2 (3)	45	135	Attended by the R&D Network researchers and technicians
10. Briefings for International Trainees/Research and Extension Administrators	11 (3)	41	125	Requested by UPLB/ SEARCA/IRRI/NIA
11. Institution Building Workshops/Seminars within the PhilRice Network	11 (5)	1,137	5,685	Attended by members of the rice R&D network
12. GATT hearings	2 (1)	630	630	Requested by the Senate; Coordinated by Comm, SSPR
Total:	26	5,558	23,034	

Remarks: * = A four-month or season-long Rice Specialists' Training Course on IMP(RST-IPM) was simultaneously conducted with five farmers' field schools(FFS) in barangays near PhilRice. The RST-IPM and FFS are the flagship training programs of PhilRice in support of the National IPM Program known as the Kasaganaan sa Sakahan at Kaiikasan (KASAKALIKASAN).

Source: Philippine Rice R&D Annual Report, 1994
Philippine Rice Research Institute

Table K.1-6 Selection Criteria for Post-Harvest & Agro-Industry Facilities

Facilities	Selection Criteria
1. Agricultural Machinery	
(1) Tractor	Expected area: 1/3 of total planting area. Available to 80-100ha/unit. Supply: one unit for every approx. 300ha. Remained 2/3 area should be done by means of traditional style. Area which has flatter land is more advantageous.
(2) Hand Tractor	Expected area: 1/3 of total planting area, except above (1) area. Available to 5-10ha/unit. Remained 2/3 area should be done by means of traditional style. Supply: one unit for every approx. 50 - 60ha.
(3) Sprayer	Expected area: 1/3 of total planting area. Available to 5ha/unit. Remained 2/3 area should be done by individual farmers. Supply: one unit for every approx. 15ha.
(4) Animal Drawn Plow	Supply: one unit for every 5 heads of dispersed carabaos. Remained should be prepared by individual farmers.
(5) Comb-Tooth Harrow	Supply: one unit for every 5 heads of dispersed carabaos. or one unit for every approx. 10ha. Remained should be prepared by individual farmers.
(6) Animal Drawn Sledge	Supply: one unit for every 5 heads of dispersed carabaos. Remained should be prepared by individual farmers.
2. Post-Harvest & Agro-Industry Facilities	
(1) Multi-Purpose Dryer	Expected crops: paddy, corn, beans, coconut, cacao and coffee. Supply: one unit for every approx. 50t of production. except below (7),(8) and (10) area.
(2) Mechanical Dryer	Expected crops: seeds for paddy and corn Supply: one unit for more than approx. 100ha.
(3) Reaper	Expected area: 1/3 of total harvesting area. Supply: one unit for every approx. 20-40ha of paddy. Remained 2/3 area should be done by means of traditional style.
(4) Rice Thresher (foot type)	Supply: one unit for every approx. 20-30 t of paddy production, except below (5) production.
(5) Rice Thresher (w/prime mover)	Supply: one unit for every approx. 80-100 t of paddy production. Remaineds should be done by above (4).
(6) Winnowing	Supply: one unit for every approx. 20-30 t of paddy production, except below (5) production. Collaborate with above (4) equipment.
(7) Warehouse with Solar Dryer	Expected crops: paddy, corn, vegetables, rootcrops and fruit. using for collecting, selecting, grading, storing and marketing works. Supply: one set for every approx. 150-200 t of production, except below (8) and (10) production.
(8) Rice Agro-Industry Center	Expected crops: paddy Supply: one set for more than 150 - 200 t of production.
(9) Corn Sheller (handy type)	Expected crops: corn Supply: one unit for every approx. 10-20 t of production, except below (10) production.
(10) Corn Agro-Industry Center	Expected crops: corn Supply: one set for more than 150 - 200 t of production.

Note: Numbers of equipment and facilities in the proposed plan should be deducted numbers of existing equipment and facilities.

Table K.1-6 Scale of Post-Harvest Facilities under Government Programs

Activity Program	(1)	(2)	(3)	(4)
1. CARP-Batangay Marketing Center (CBMC)	Solar Dryer 16x18 m 448 m ² 200 cab/day	Warehouse 8x20 m 160 m ² 3,300 cav/ storage	Details of Warehouse Office 2x6.5 m 13 m ² CR 1.5x2 m 3 m ²	Rice Mill Input = 15-20 cav/hr Output = 10 cav/hr Weighing Scale Moisture Meter Wooden Pallets
2. Farm Level Grains Center I (FLGC I)	Solar Dryer 16x18 m 448 m ² 200 cab/day	Warehouse 8x20 m 160 m ² 3,300 cav/ storage	Details of Warehouse Office 2x6.5 m 13 m ² CR 1.5x2 m 3 m ²	Weighing Scale Moisture Meter Wooden Pallets
3. Farm Level Grains Center III (FLGC III)	Concrete Drive Way 6 m wide 27x42-15x30 684 m ²	Warehouse 15x30 m 450 m ² 10,000 cav/ storage	Details of Warehouse Office 5x6 m 30 m ² Farmer's Shed 5x24 m 120 m ²	Remarks: 1,800 - 2,000 m ² land required.
4. Municipal Level Grains Center (MLGC)	Solar Dryer 8x15 m 120 m ² 100-150 cab/ day	Warehouse 8x14 m 112 m ² 2,500 cav/ storage		

Source: Quedan and Rural Credit Guarantee Corporation
National Food Authority

Table K.1-7 Proposed Scale of Post-Harvest & Agro-Industry Facilities

Facilities	Scale of Facilities				
	± @	± A	± B	± C	
1. Multi-purpose Dryer	Solar Dryer 15x30 m 450 m ² 100-150 cab/ day			Remarks: approx. 600 m ² land required.	
2. Warehouse with Solar Dryer	Solar Dryer 15x30 m 450 m ² 100-150 cab/ day	Warehouse 6x16 m 96 m ² 1,200 cav/ storage		Remarks: approx. 800 m ² land required.	
3. Rice Agro-Industry Center	Solar Dryer 15x30 m 450 m ² 100-150 cab/ day	Warehouse 6x16 m 96 m ² 1,200 cav/ storage	Details of Warehouse Office 3x4.5 m 13.5 m ² Warehouse 6x9 m 54 m ² Millin Room 4x6 m 24 m ² Storage & CR 1.5x3 m 4.5 m ²	Rice Mill Input = 6 cav/hr	Weighing Scale Moisture Meter Wooden Pallets
4. Corn Agro-Industry Center	Solar Dryer 15x30 m 450 m ² 100-150 cab/ day	Warehouse 6x16 m 96 m ² 1,200 cav/ storage	Details of Warehouse Office 3x4.5 m 13.5 m ² Warehouse 6x9 m 54 m ² Millin Room 4x6 m 24 m ² Storage & CR 1.5x3 m 4.5 m ²	Corn Mill Input = 6 cav/hr Corn Sheller Output = 100 kg/hr	Weighing Scale Moisture Meter Wooden Pallets

Table K.1-8 Proposed Post-Harvest & Agro-Industry Plan

	Reg. CAR	Reg. I	Reg. II	Reg. III	Reg. IV	Reg. V	Reg. VI	Reg. VII	Reg. VIII	Reg. X	Reg. XI	Reg. XII
	Abra	La Union	Quirino	Bataan	Quezon	Cam. Sur	Aklan	Bonol	Leyte	Bukidnon	Davao	Surigao City
	San Juan	Tallog	Maddela	Tuyo Balanga	Calaug	Tinambac	Altavas	Trinidad	Hilongos	Malaybalay	Auracion	Surigao City
	Sappa-ac		Colcaville	Montilla	Maulawin	Pagasa	Abiera	San Vicente	Marangog	Slee	Kipalit	Mari
1. Agricultural machinery												
(1) Tractor	1	2	1	1	2	-	-	1	-	-	1	-
(2) Hand Tractor	6	5	2	-	2	-	-	3	1	1	1	-
(3) Sprayer	3	2	12	2	5	2	1	0	5	3	3	-
(4) Animal Drawn Plow	3	2	3	1	3	3	3	3	3	3	3	-
(5) Comb-Tooth Harrow	3	2	3	-	3	2	1	3	3	3	3	-
(6) Animal Drawn Sledge	3	2	3	1	3	3	3	3	3	3	3	-
2. Post-Harvest & Agro-Industry Facilities												
(1) Multi-Purpose Dryer (for paddy and corn) (for others)	2 (2)	1 (1)	2 (2)	-	3 (1)	3 (3)	2 (2)	3 (1)	2 (1)	1 (1)	1 (1)	1 (0)
(2) Mechanical Dryer	1	1	1	-	1	-	-	1	1	1	-	-
(3) Reaper	2	2	2	-	2	-	-	2	2	1	-	-
(4) Rice Thresher (foot type)	7	2	3	-	2	3	2	1	1	1	3	-
(5) Rice Thresher (winnowing mover)	1	1	1	-	1	-	-	1	1	1	-	-
(6) Winnower	7	2	3	-	2	3	2	2	2	1	3	-
(7) Warehouse with solar dryer	1	1	1	1	1	1	1	1	1	1	1	-
(8) Rice Agro-Industry Center	1	1	1	-	1	-	-	1	-	-	-	-
Warehouse with solar dryer	(1)	(1)	(1)	-	(1)	-	-	(1)	-	-	-	-
Rice Mill (one pass type)	(1)	(1)	(1)	-	(1)	-	-	(1)	-	-	-	-
Quality control equipment	(1)	(1)	(1)	-	(1)	-	-	(1)	-	-	-	-
(9) Corn Sheller (handy type)	5	2	6	-	3	2	-	3	2	2	2	-
Corn Agro-Industry Center	-	-	1	-	-	-	-	1	-	1	-	-
Warehouse with solar dryer	-	-	(1)	-	-	-	-	(1)	-	(1)	-	-
Corn Mill	-	-	(1)	-	-	-	-	(1)	-	(1)	-	-
Corn Sheller (winnowing mover)	-	-	(1)	-	-	-	-	(1)	-	(1)	-	-
Quality control equipment	-	-	(1)	-	-	-	-	(1)	-	(1)	-	-

Remarks: - ...not applicable
(1) ...included in the above item.

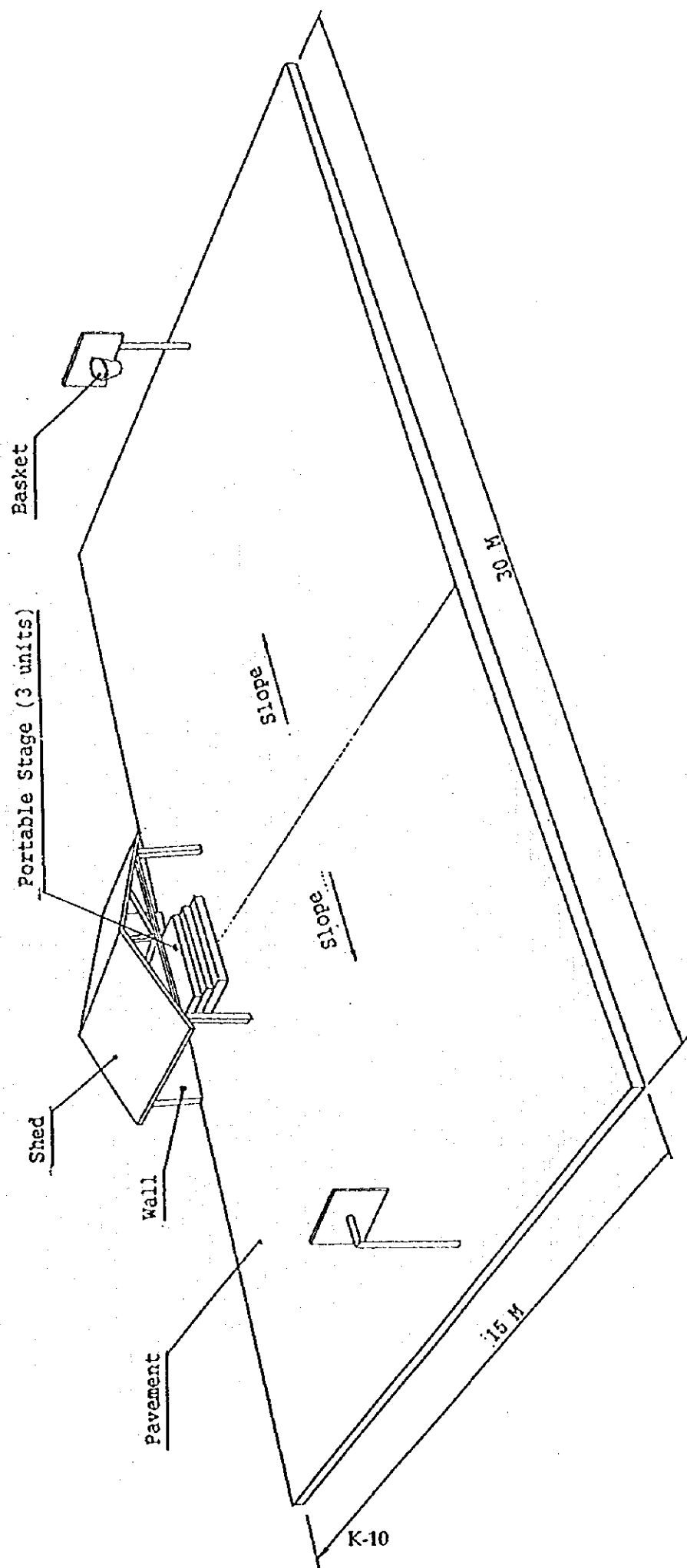


FIGURE K.1-1 GENERAL PLAN OF MULTI-PURPOSE DRYER.

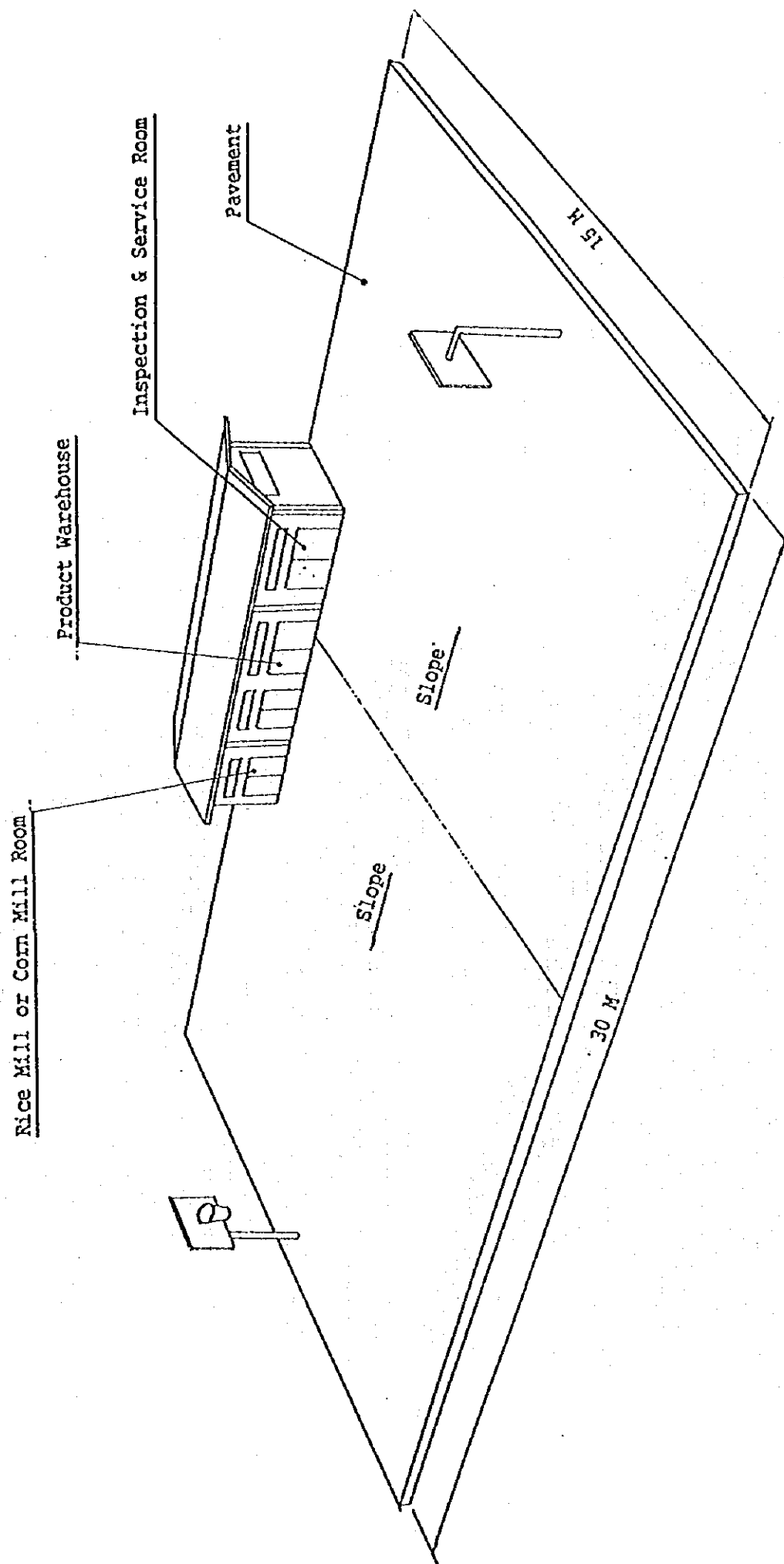


FIGURE K.1-2 GENERAL PLAN OF RICE OR CORN AGRO-INDUSTRY CENTER

Table K.2-1 Present Family Working Status

		CAR. Abra Bangüed Sappa-ac per H.H.	per person	Reg. II. Quirino Maddela Cofcavilla per H.H.	per person	Reg. VIII. Leyte Hilongos Marangog per H.H.	per person	Reg. X. Bukdnon Malaybalay Silae per H.H.	per person
<hr/>									
1. Own Farm									
(1) Labor Force	(person)								
a. Regular	(male)	1.26	63.00	1.26	63.00	1.20	60.00	1.18	59.00
	(female)	0.88	44.00	0.80	40.00	0.36	18.00	0.08	4.00
b. Temporary	(male)	0.56	28.00	0.08	4.00	0.24	12.00	0.16	8.00
	(female)	0.80	40.00	0.24	12.00	0.28	14.00	0.34	17.00
(2) Total Days of Work	(man-day)	206.32	163.75	310.84	246.70	20.50	17.08	246.76	209.12
a. Regular	(male)	146.78	166.80	158.10	197.63	69.18	192.17	6.76	84.50
	(female)	37.72	67.36	10.36	129.50	15.76	65.67	9.88	61.75
b. Temporary	(male)	58.38	72.98	22.00	91.67	26.26	93.79	18.88	55.53
	(female)								
2. Other Farm									
(1) Labor Force	(person)								
a. Regular	(male)	0.24	12.00	0.04	2.00	0.32	16.00	0.08	4.00
	(female)	0.10	5.00	0.02	1.00	0.10	5.00	0.00	0.00
b. Temporary	(male)	0.18	9.00	0.08	4.00	0.34	17.00	0.08	4.00
	(female)	0.26	13.00	0.04	2.00	0.18	9.00	0.02	1.00
(2) Total Days of Work	(man-day)								
a. Regular	(male)	31.66	131.92	14.60	365.00	40.18	125.56	9.84	123.00
	(female)	7.56	75.60	4.80	240.00	21.66	216.60	0.00	0.00
b. Temporary	(male)	10.16	56.44	9.08	113.50	25.20	74.12	10.24	128.00
	(female)	14.78	56.85	2.60	65.00	17.50	97.22	0.20	10.00
3. Non-Farm Work									
(1) Labor Force	(person)								
a. Regular	(male)	0.16	8.00	0.06	3.00	0.32	16.00	0.04	2.00
	(female)	0.14	7.00	0.04	2.00	0.16	8.00	0.02	1.00
b. Temporary	(male)	0.46	23.00	0.14	7.00	0.10	5.00	0.02	1.00
	(female)	0.34	17.00	0.10	5.00	0.08	4.00	0.02	1.00
(2) Total Days of Work	(man-day)								
a. Regular	(male)	52.58	328.63	19.90	331.67	96.28	300.88	11.80	295.00
	(female)	49.88	356.29	14.50	362.50	49.56	309.75	2.40	120.00
b. Temporary	(male)	49.16	106.87	17.94	128.14	25.86	258.60	0.96	48.00
	(female)	41.80	122.94	21.68	216.80	22.90	286.25	0.72	36.00

Source: Survey of This Study Team

Table K.2-2 Inventory of Post-Harvest, Agro-Industry and Others

	CAR. Abra Bangued Sappa-ac Sappa-ac Bangued	Reg. II. Quirino Maddela Cofcaville Cofcaville Maddela	Reg. VIII. Leyte Hilongos Marangog Marangog Hillongos	Reg. X. Bukdnnon Malaybalay Silae Malayblay	
1. Post-Harvest Facilities					
(1) Rice Mill	2 (private)	-	0 14 (private)	0 17 2 (private)	63
(2) Mechanical Dryer	0	-	0 4 (batch type)	0 0 0	3
(3) Solar Dryer	0	-	5 111 (Barangay)	1 - 3	111
(4) Warehouse	0	-	0 12 (private)	0 - 2 (private)	76
(5) Tractor	0	-	0 7	0 - 0	0
(6) Hand Tractor	0	-	1 - (private)	- - 1 (private)	27
(7) Tresher	-	-	- 7	- - 0	130
2. Agro-Processing Facilities					
	0	-	0 -	0 0 0	1 (feed mill)
3. Electricity Supply					
	ABRECO 131H.H.	QUIRELCO 5,583H.H. 46H.H.	3,121H.H.	0 LEYECO BUSECO 4,923H.H. 16H.H.	7,550H.H.
4. Business Shop					
(1) Sari Sari Store	10	490	6	-	0 208 14 360
(2) Service	0	157	-	55	0 - 0 365
(3) Retail	0	-	-	240	0 - 5 1,033
(4) Whole Sale	0	-	-	11	0 - 0 218
(5) Others	0	450	1	-	0 43 - 197
5. Industry					
(1) Blacksmith	0	-	1	3	0 4 - -
(2) Handicraft	0	-	1	90	0 - 1 6
(3) Others	0	-	0	39	0 22 - -

Source: Survey of This Study Team

Table K.2-3 Present Transportation Status & Marketing Practice

	CAR. Abra Bangued Sappa-ac	Reg. II. Quirino Maddela Cofcaville	Reg. VIII. Leyte Hilongos Marangog	Reg. X. Bukdnnon Malaybalay Silae
1. Transportation Status	(by what) (min)	(by what) (min)	(by what) (min)	(by what) (min)
(1) to Barangay Hall	warking 5.0	warking 13.7	warking 17.3	warking 16.4
(2) to Poblacion	jeepney/ tricycle 29.6	jeepney 45.9	warking/ motorcycle 82.8	jeepney/ warking 108.1
(3) to Market	jeepney 35.5	jeepney/ tricycle/cart 54.8	carabao/ motorcycle 85.5	jeepney/ track 138.8
(4) Distance (km)				
a. to Poblacion	20.0	7.0	14.0	13.0
b. to Province Capital	-	35.0	-	58.0
2. Marketing Practice				
(1) Usual Destination	(per 50H.H.)	(per 50H.H.)	(per 50H.H.)	(per 50H.H.)
a. Local Trader	12.0	50.0	42.0	46.0
b. Cooperatives	0.0	0.0	-	-
c. Consumers	4.0	0.0	-	-
d. Relatives	2.0	0.0	-	-
e. Export	1.0	0.0	-	-
f. NFA	0.0	0.0	-	-
(2) Not Reseanable Price	-	40.0	40.0	44.0
(3) Marketing Problem	transportation	transportation	transportation	transportation lack of post-harvest facilities

Source: Survey of This Study Team

Table K.2-4 Willingness & Skill of Rural Industry/Handicraft (out of 50 persons)

		CAR. Abra Bangued Sappa-ac	Reg. II. Quirino Maddela Cofcaville	Reg. VIII. Leyte Hilongos Marangog	Reg. X. Bukdnon Malaybalay Silae
1. Mushroom Production	(1) Willingness (yes)	39	26	28	33
	(no)	1	6	1	13
	(2) Skill (yes)	15	10	7	7
2. Cahrcoal Production	(no)	20	14	27	27
	(1) Willingness (yes)	14	11	23	8
	(no)	6	12	3	28
3. Firewood Production	(2) Skill (yes)	8	5	16	8
	(no)	7	8	8	16
	(1) Willingness (yes)	23	8	19	22
4. Bamboo Timber Production	(no)	1	11	4	15
	(2) Skill (yes)	16	6	14	17
	(no)	4	6	7	14
5. Bamboo Shoot Production	(1) Willingness (yes)	19	10	17	37
	(no)	0	11	1	8
	(2) Skill (yes)	3	4	10	25
6. Coconut Oil Extraction	(no)	10	10	7	11
	(1) Willingness (yes)	22	6	15	26
	(no)	1	11	1	14
7. Coconut Charcoal Making	(2) Skill (yes)	6	2	7	10
	(no)	12	10	7	17
	(1) Willingness (yes)	21	8	21	23
8. Coconut Lumber Processing	(no)	0	11	2	15
	(2) Skill (yes)	9	4	11	11
	(no)	9	10	11	17
9. Fish Culture	(1) Willingness (yes)	17	8	20	15
	(no)	2	11	3	22
	(2) Skill (yes)	8	2	16	9
10. Handicraft Making	(no)	8	11	7	16
	(1) Willingness (yes)	17	9	14	16
	(no)	2	10	2	20
11. Sewing/ Embroidering	(2) Skill (yes)	8	1	7	6
	(no)	7	12	8	18
	(1) Willingness (yes)	38	38	12	28
12. Others (Weaving) (Food Process)	(no)	0	1	4	14
	(2) Skill (yes)	14	9	3	10
	(no)	19	18	13	18
13. Others (Weaving) (Food Process)	(1) Willingness (yes)	25	14	15	21
	(no)	0	8	3	22
	(2) Skill (yes)	10	6	5	9
14. Others (Weaving) (Food Process)	(no)	11	9	9	22
	(1) Willingness (yes)	13	13	10	16
	(no)	0	12	5	24
15. Others (Weaving) (Food Process)	(2) Skill (yes)	4	7	4	5
	(no)	6	9	9	23
	(1) Willingness (yes)	-	1	3	-
16. Others (Weaving) (Food Process)	(no)	-	-	-	-
	(2) Skill (yes)	-	-	-	-
	(no)	-	1	3	-

Source: Survey of This Study Team

Table K2-5 Comparison of Crops & Crops Production without & with Project (1)

Case I.

Site: Reg. CAR. Abra, Bangued, Sappa-ac

Item	Present Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	88	1.20	105.6	58	3.10	179.8	-30	1.90	74.2	
- dry season							0	0.00	0.0	
Paddy, irrigated										
- wet season				30	4.40	132.0	30	4.40	132.0	
- dry season										
sub-total:	88		105.6	88		311.8	0		206.2	
(2) Corn										
- wet season	9	1.50	13.5	36	3.00	108.0	27	1.50	94.5	
- dry season										
- diver, rainfed, dry				23	3.00	69.0	23	3.00	69.0	
- diver, irrigated										
sub-total:	9		13.5	59		177.0	50		163.5	
Sub-total:	97		119.1	147		488.8	50		369.7	
2. Vegetables										
(1) Vegetables										
- wet season										
- wet season										
- diver, irrigated, dry				6	1.00	6.0	6	1.00	6.0	
- diver	13	1.30	16.9				-13	-1.30	-16.9	tobacco
(2) Beans										
- dry season	12	0.40	4.8				-12	-0.40	-4.8	soybean
- dry season				14	0.90	12.6	14	0.90	12.6	mungbean
- wet season				14	0.90	12.6	14	0.90	12.6	peanut
(3) Rootcrops	21	2.00	42.0	21	6.80	142.8	0	4.80	100.8	sweet potato
Sub-total:	46		63.7	55		174.0	9		110.3	
3. Tree Crops										
(1) Coconut										
- existing										
- supplemental planting										
(2) Banana	3	5.80	17.4	13	10.0	130.0	10	4.20	112.6	
(3) Mango	5	2.60	13.0	64	17.9	1,146	59	15.3	1,133	
(4) Cashew Nut				37	2.0	74	37	2.0	74	
(5) Cacao										
(6) Abaca										
(7) Coffee										
Sub-total:	8		30.4	114		1,350	106		1,319	
4. Forest Trees										
(1) Nurse Trees *				22		198.0	22		198	kakawate
(2) Forest Trees (1) *				96		9,696	96		9,696	bagras
(3) Forest Trees (2) *				41		3,817	41		3,817	mahogany
Sub-total:	0		0	159		13,711	159		13,711	
Total(ex. forest trees):	151		213	316		2,012	165		1,799	

Remarks: -...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-5 Comparison of Crops & Crop Production without & with Project (2)

Case II.

Site: Reg. CAR. Abra, Bangued, Sappa-ac

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	88	1.20	105.6	58	3.10	179.8	-30	1.90	74.2	
- dry season	-	-	-	-	-	-	0	0.00	0.0	
Paddy, irrigated										
- wet season	-	-	-	30	4.40	132.0	30	4.40	132.0	
- dry season	-	-	-	-	-	-	-	-	-	
sub-total:	88	-	105.6	88	-	311.8	0	-	206.2	
(2) Corn										
- wet season, SALT	9	1.50	13.5	26	3.00	78.0	17	1.50	64.5	
- dry season	-	-	-	-	-	-	-	-	-	
- diver, rainfed, dry	-	-	-	23	3.00	69.0	23	3.00	69.0	
- diver, irrigated	-	-	-	-	-	-	-	-	-	
sub-total:	9	-	13.5	49	-	147.0	40	-	133.5	
Sub-total:	97	-	119.1	137	-	458.8	40	-	339.7	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- diver, irrigated, dry	-	-	-	6	1.00	6.0	6	1.00	6.0	garlic
- diver	13	1.30	16.9	-	-	-	-13	-1.30	-16.9	tobacco
(2) Beans										
- dry season	12	0.40	4.8	-	-	-	-12	-0.40	-4.8	soybean
- dry season	-	-	-	10	0.90	9.0	10	0.90	9.0	mungbeans
- wet season	-	-	-	10	0.90	9.0	10	0.90	9.0	peanut
(3) Rootcrops	21	2.00	42.0	21	6.80	142.8	0	4.80	100.8	sweet potato
Sub-total:	46	-	63.7	47	-	166.8	1	-	103.1	
3. Tree Crops										
(1) Coconut										
- existing	-	-	-	-	-	-	-	-	-	
- supplemental planting	-	-	-	-	-	-	-	-	-	
(2) Banana	3	5.80	17.4	13	10.0	130.0	10	4.20	112.6	
(3) Mango	6	2.60	13.0	64	17.9	1,148	59	15.3	1,133	
(4) Fruit	-	-	-	-	-	-	-	-	-	
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	-	-	-	-	-	-	-	-	-	
(7) Coffee	-	-	-	-	-	-	-	-	-	
Sub-total:	8	-	30.4	77	-	1,278	69	-	1,245	
4. Forest Trees										
(1) Nurse Trees *	-	-	-	14	-	126.0	14	-	126	kakawate
(2) Forest Trees (1) *	-	-	-	92	-	9,292	92	-	9,292	bagras
(3) Forest Trees (2) *	-	-	-	62	-	5,772	62	-	5,772	mahogany
(4) Forest Trees (3) *	-	-	-	7	-	0	7	-	0	flemingia
Sub-total:	0	-	0	168	-	15,190	168	-	15,190	
Total(ex. forest trees):	151	-	213	261	-	1,901	110	-	1,688	

Remarks: -...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-5 Comparison of Crops & Crop Production without & with Project (3)

Case III.

Site: Reg. CAR. Abra, Bangued, Sappa-ac

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	88	1.20	105.6	58	3.10	179.8	-30	1.90	74.2	
- dry season	-	-	-	-	-	-	-	-	-	
Paddy, irrigated										
- wet season	-	-	-	30	4.40	132.0	30	4.40	132.0	
- dry season	-	-	-	-	-	-	-	-	-	
sub-total:	88	-	105.6	88	-	311.8	0	-	206.2	
(2) Corn										
- wet season	9	1.50	13.5	9	3.00	27.0	0	1.50	13.5	
- dry season	-	-	-	-	-	-	-	-	-	
- diver, rainfed, dry	-	-	-	23	3.00	69.0	23	3.00	69.0	
- diver, irrigated	-	-	-	-	-	-	-	-	-	
sub-total:	9	-	13.5	32	-	96.0	23	-	82.5	
Sub-total:	97	-	119.1	120	-	407.8	23	-	288.7	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- diver, irrigated, dry	-	-	-	6	1.00	6.0	6	1.00	6.0	garlic
- diver	13	1.30	16.9	-	-	-	-13	-1.30	-16.9	tobacco
(2) Beans										
- dry season	12	0.40	4.8	-	-	-	-	-	-	soybean
- wet season	-	-	-	-	-	-	-	-	-	
(3) Rootcrops	21	2.00	42.0	21	6.80	142.8	0	4.80	100.8	sweet potato
Sub-total:	46	-	63.7	27	-	148.8	-19	-	85.1	
3. Tree Crops										
(1) Coconut										
- existing	-	-	-	-	-	-	-	-	-	
- supplemental planting	-	-	-	-	-	-	-	-	-	
(2) Banana	3	5.80	17.4	3	10.0	30.0	0	4.20	12.6	
(3) Mango	5	2.60	13.0	5	17.9	90	0	15.3	77	
(4) Fruit	-	-	-	-	-	-	-	-	-	
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	-	-	-	-	-	-	-	-	-	
(7) Coffee	-	-	-	-	-	-	-	-	-	
Sub-total:	8	-	30.4	8	-	120	0	-	89	
4. Forest Trees										
(1) Nurse Trees *	-	-	-	-	-	-	0	-	0	kakawate
(2) Forest Trees (1) *	-	-	-	-	-	-	0	-	0	bagras
(3) Forest Trees (2) *	-	-	-	-	-	-	0	-	0	mahogany
(4) Forest Trees (3) *	-	-	-	-	-	-	0	-	0	flemingia
Sub-total:	0	-	0	0	-	0	0	-	0	
Total(ex. forest trees):	151	-	213	155	-	676	4	-	463	

Remarks: -...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-6 Comparison of Crops & Crop Production without & with Project (1)

Case 1.

Site: Reg. II. Qurino, Maddela, Colcaville

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	32	2.50	80.0	32	3.50	112.0	0	1.00	32.0	
- dry season	13	1.80	23.4	13	3.50	45.5	0	1.70	22.1	
Paddy, irrigated										
- wet season	-	-	-	6	4.90	29.4	6	4.90	29.4	
- dry season	-	-	-	7	5.50	38.5	7	5.50	38.5	
sub-total:	45		103.4	58		225.4	13		122.0	
(2) Corn										
- wet season	155	2.50	387.5	175	4.00	700.0	20	1.50	312.5	
- dry season	124	1.90	235.6	144	4.00	576.0	20	2.10	340.4	
- diver, rainfed, dry	-	-	-	-	-	-	-	-	-	
- diver, irrigated	-	-	-	-	-	-	-	-	-	
sub-total:	279		623	319		1,276	40		653	
Sub-total:	324		727	377		1,501	53		775	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- dry season	-	-	-	-	-	-	-	-	-	
- diver, irrigated, dry	-	-	-	-	-	-	-	-	-	
(2) Beans										
- wet	8	0.20	1.6	19	0.90	17.1	11	0.70	15.5	mungbeans
- dry	16	0.40	6.4	8	0.90	7.2	-8	0.50	0.8	mungbeans
- dry	-	-	-	8	0.90	7.2	8	0.90	7.2	
(3) Rootcrops	8	2.00	16.0	8	6.80	54.4	0	4.80	38.4	sweet potato
(4) Rootcrops, SALT	-	-	-	62	14.2	880.4	62	14.20	880.4	cassava
Sub-total:	32		24.0	105		966.3	73		942.3	
3. Tree Crops										
(1) Coconut										
- existing	-	-	-	-	-	-	-	-	-	
- supplemental planting	-	-	-	-	-	-	-	-	-	
(2) Banana	18	3.10	55.8	47	10.00	470.0	29	6.90	414.2	
(3) Mango	5	0.50	2.5	54	0.17	9.2	49	-0.33	6.7	
(4) Fruit	-	-	-	71	14.2	1,008	71	14.20	1,008	ramblan
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	-	-	-	-	-	-	-	-	-	
(7) Coffee	-	-	-	-	-	-	-	-	-	
Sub-total:	23		58.3	172		1,487	149		1,429	
4. Forest Trees										
(1) Nurse Trees *	-	-	-	19	9.00	171.0	19	9.00	171.0	kakawate
(2) Forest Trees (1) *	-	-	-	62	-	5,165	62	-	5,165	gmelina
(3) Forest Trees (2) *	-	-	-	14	-	1,304	14	-	1,304	mahogany
Sub-total:	0	-	0	95	-	6,640	95	-	6,640	
Total(ex. forest trees):	379		809	654		3,955	275		3,146	

Remarks: ...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-6 Comparison of Crops & Crop Production without & with Project (2)

Case II.

Site: Reg. II. Qurino, Maddela, Cofcaville

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	32	2.50	80.0	32	3.50	112.0	0	1.00	32.0	
- dry season	13	1.80	23.4	13	3.50	45.5	0	1.70	22.1	
Paddy, irrigated										
- wet season	-	-	-	6	4.90	29.4	6	4.90	29.4	
- dry season	-	-	-	7	5.50	38.5	7	5.50	38.5	
sub-total:	45		103.4	58		225.4	13		122.0	
(2) Corn										
- wet season	155	2.50	387.5	155	4.00	620.0	0	1.50	232.5	
- dry season	124	1.90	235.6	124	4.00	496.0	0	2.10	260.4	
- diver, rainfed, dry	-	-	-	-	-	-	-	-	-	
- diver, irrigated	-	-	-	-	-	-	-	-	-	
sub-total:	279		623	279		1,116	0		493	
Sub-total:	324		727	337		1,341	13		615	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- dry season	-	-	-	-	-	-	-	-	-	
- diver, irrigated, dry	-	-	-	-	-	-	-	-	-	
(2) Beans										
- wet	8	0.20	1.6	-	-	-	-	-	-	mungbeans
- dry	16	1.10	17.6	-	-	-	-	-	-	peanut
- dry	-	-	-	22	0.90	19.8	22	0.90	19.8	mungbeans
(3) Rootcrops	8	2.00	16.0	8	6.80	54.4	0	4.80	38.4	sweet potato
(4) Rootcrops, SALT	-	-	-	62	14.2	880.4	62	14.20	880.4	cassava
Sub-total:	32		35.2	92		954.6	84		938.6	
3. Tree Crops										
(1) Coconut										
- existing	-	-	-	-	-	-	-	-	-	
- supplemental planting	-	-	-	-	-	-	-	-	-	
(2) Banana	18	3.10	55.8	47	10.00	470.0	29	6.90	414.2	
(3) Mango	5	0.50	2.5	-	-	-	-	-	-	
(4) Fruit	-	-	-	-	-	-	-	-	-	ramblan
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	-	-	-	-	-	-	-	-	-	
(7) Coffee	-	-	-	-	-	-	-	-	-	
Sub-total:	23		58.3	47		470	29		414	
4. Forest Trees										
(1) Nurse Trees *	-	-	-	3	9.00	27.0	3	9.00	27.0	kakawate
(2) Forest Trees (1) *	-	-	-	119	-	5,165	119	-	5,165	gmelina
(3) Forest Trees (2) *	-	-	-	119	-	1,304	119	-	1,304	mahogany
Sub-total:	0	-	0	241	-	6,496	241	-	6,496	
Total(ex. forest trees):	379		820	476		2,766	126		1,968	

Remarks: -...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-6 Comparison of Crops & Crop Production without & with Project (3)

Case III.

Site: Reg. II. Quirino, Maddela, Cofcavilla

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	32	2.50	80.0	32	3.50	112.0	0	1.00	32.0	
- dry season	13	1.80	23.4	13	3.50	45.5	0	1.70	22.1	
Paddy, irrigated										
- wet season		-		6	4.90	29.4	6	4.90	29.4	
- dry season		-		7	5.50	38.5	7	5.50	38.5	
sub-total:	45		103.4	58		225.4	13		122.0	
(2) Corn										
- wet season	155	2.50	387.5	155	4.00	620.0	0	1.50	232.5	
- dry season	124	1.90	235.6	124	4.00	496.0	0	2.10	260.4	
- diver, rainfed, dry		-			-			-		
- diver, irrigated		-			-			-		
sub-total:	279		623	279		1,116	0		493	
Sub-total:	324		727	337		1,341	13		615	
2. Vegetables										
(1) Vegetables										
- wet season		-			-			-		
- wet season		-			-			-		
- dry season		-			-			-		
- diver, irrigated, dry		-			-			-		
(2) Beans										
- wet	8	0.20	1.6		-		-8	-0.20	-1.6	mungbeans
- dry	16	1.10	17.6		-			-		peanut
- dry		-		22	0.90	19.8	22	0.90	19.8	mungbeans
(3) Rootcrops	8	2.00	16.0	8	6.80	54.4	0	4.80	38.4	sweet potato
(4) Rootcrops, SALT		-		62	14.2	880.4	62	14.20	880.4	cassava
Sub-total:	32		35.2	92		954.6	76		937.0	
3. Tree Crops										
(1) Coconut										
- existing		-			-			-		
- supplemental planting		-			-			-		
(2) Banana	18	3.10	55.8	23	10.00	230.0	5	6.90	174.2	
(3) Mango	5	0.50	2.5		-			-		
(4) Fruit		-			-			-		ramblan
(5) Cacao		-			-			-		
(6) Abaca		-			-			-		
(7) Coffee		-			-			-		
Sub-total:	23		58.3	23		230	5		174	
4. Forest Trees										
(1) Nurse Trees *		-			-		0	-	0.0	kakawale
(2) Forest Trees (1) *		-			-		0	-	0	gmelina
(3) Forest Trees (2) *		-			-		0	-	0	mahogany
Sub-total:	0	-	0	0	-	0	0	-	0	
Total(ex. forest trees):	379		820	452		2,526	94		1,728	

Remarks: -...not available

*...yield unit = cu. m

Source: Survey of This Study Team

Table K.2-7 Comparison of Crops & Crop Production without & with Project (1)

Case I.

Site: Reg. VIII. Leyte, Hilongos, Marangog

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	24	0.50	12.0	13	3.10	40.3	-11	2.60	28.3	
- dry season	14	0.50	7.0	8	3.10	24.8	-6	2.60	17.8	
Paddy, irrigated										
- wet season		-		11	4.40	48.4	11	4.40	48.4	
- dry season		-			-			-		
sub-total:	38		19.0	32		113.5	-6		94.5	
(2) Corn										
- wet season		-		29	3.00	87.0	29	3.00	87.0	
- dry season	10	0.40	4.0	25	3.00	75.0	15	2.60	71.0	
- dry	26	0.50	13.0		-		-26	-0.50	-13.0	
- intercrop	3	0.50	1.5		-		-3	-0.50	-1.5	
sub-total:	39		18.5	54		162.0	15		143.5	
Sub-total:	77		37.5	86		275.5	9		238.0	
2. Vegetables										
(1) Vegetables										
- wet season		-			-			-		
- wet season		-			-			-		
- dry season, diver		-		11	3.20	35.2	11	3.20	35.2	squash
(2) Beans										
- dry season	9	0.50	4.5	27	0.90	24.3	18	0.40	19.8	peanuts
- SALT, wet		-		7	0.90	6.3	7	0.90	6.3	mungbean
(3) Rootcrops	13	2.00	26.0	11	6.80	74.8	-2	4.80	48.8	sweet potato
Sub-total:	22		30.5	56		140.6	34		110.1	
3. Tree Crops										
(1) Coconut										
- existing	86	0.50	43.0	34	0.80	27.2	-52	0.30	-15.8	
- supplemental planting		-		52	2.50	130.0	52	2.50	130.0	
(2) Banana	12	2.20	26.4	21	10.0	210.0	9	7.80	183.6	
(3) Mango		-			-			-		
(4) Fruit		-		34	7.5	255.0	34	7.50	255.0	jackfruit
(5) Cacao		-			-			-		
(6) Abaca	17	0.30	5.1	31	1.30	40.3	14	1.00	35.2	
Sub-total:	115		74.5	172		662.5	57		588.0	
4. Forest Trees										
(1) Nurse Trees *		-		7		501.9	7	0.00	501.9	falcata
(2) Forest Trees *		-		95		2,185	95	0.00	2,185	mahogany
(3) Forest Trees *		-		95		7,667	95	0.00	7,667	bagalunga
(4) Forest Trees *		-		7		583	7	0.00	583	gmelina
Sub-total:	0		0	204		10,937	204		10,937	
Total(ex. forest trees):	214		143	314		1,079	100		936	

Remarks: ...not available

*...yield unit = cu.m

Source: Survey of This Study Team

Table K.2-7 Comparison of Crops & Crop Production without & with Project (2)

Case II.

Site: Reg. VIII. Leyte, Hilongos, Marangog

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	24	0.50	12.0	13	3.10	40.3	-11	2.60	28.3	
- dry season	14	0.50	7.0	8	3.10	24.8	-6	2.60	17.8	
Paddy, irrigated										
- wet season	-	-	-	11	4.40	48.4	11	4.40	48.4	
- dry season	-	-	-	-	-	-	-	-	-	
sub-total:	38		19.0	32		113.5	-6		94.5	
(2) Corn										
- wet season	-	-	-	25	3.00	75.0	25	3.00	75.0	
- dry season	10	0.40	4.0	21	3.00	63.0	11	2.60	59.0	
- dry	26	0.50	13.0	-	-	-	-26	-0.50	-13.0	
- intercrop	3	0.50	1.5	-	-	-	-3	-0.50	-1.5	
sub-total:	39		18.5	46		138.0	7		119.5	
Sub-total:	77		37.5	78		251.5	1		214.0	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- dry season, diver	-	-	-	11	3.20	35.2	11	3.20	35.2	squash
(2) Beans										
- dry season	9	0.60	4.5	23	0.90	20.7	14	0.40	16.2	peanuts
- SALT, wet	-	-	-	3	0.90	2.7	3	0.90	2.7	mungbean
(3) Rootcrops	13	2.00	26.0	11	6.80	74.8	-2	4.80	48.8	sweet potato
Sub-total:	22		30.5	48		133.4	26		102.9	
3. Tree Crops										
(1) Coconut										
- existing	86	0.50	43.0	34	0.80	27.2	-52	0.30	-15.8	
- supplemental planting	-	-	-	52	2.50	130.0	52	2.50	130.0	
(2) Banana	12	2.20	26.4	21	10.0	210.0	9	7.80	183.6	
(3) Mango	-	-	-	-	-	-	-	-	-	
(4) Fruit	-	-	-	14	7.5	105.0	14	7.50	105.0	jackfruit
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	17	0.30	5.1	26	1.30	33.8	9	1.00	28.7	
Sub-total:	115		74.5	147		506.0	32		431.5	
4. Forest Trees										
(1) Nurse Trees *	-	-	-	3		215.0	3	0.00	215.0	falcata
(2) Forest Trees (1) *	-	-	-	29		2,700	29	0.00	2,700	mahogany
(3) Forest Trees (2) *	-	-	-	29		7,667	29	0.00	7,667	bagalunga
(4) Forest Trees (3) *	-	-	-	2		583	2	0.00	583	gmelina
(5) Hedgerows	-	-	-	2		0	2	0.00	0	flemingia
Sub-total:	0		0	65		11,165	65		11,165	
Total(ex. forest trees):	214		143	273		891	59		748	

Remarks: -...not available

*...yield unit = cu.m

Source: Survey of This Study Team

Table K.2-7 Comparison of Crops & Crop Production without & with Project (3)

Case III.

Site: Reg. VIII. Leyte, Hilongos, Marangog

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	24	0.50	12.0	13	3.10	40.3	-11	2.60	28.3	
- dry season	14	0.50	7.0	8	3.10	24.8	-6	2.60	17.8	
Paddy, irrigated										
- wet season		-		11	4.40	48.4	11	4.40	48.4	
- dry season		-			-			-		
sub-total:	38		19.0	32		113.5	-6		94.5	
(2) Corn										
- wet season		-		22	3.00	66.0	22	3.00	66.0	
- dry season	10	0.40	4.0	18	3.00	54.0	8	2.60	50.0	
- dry	26	0.50	13.0		-		-26	-0.50	-13.0	
- intercrop	3	0.50	1.5		-		-3	-0.50	-1.5	
sub-total:	39		18.5	40		120.0	1		101.5	
Sub-total:	77		37.5	72		233.5	-5		196.0	
2. Vegetables										
(1) Vegetables										
- wet season		-			-			-		
- wet season		-			-			-		
- dry season, diver		-		11	3.20	35.2	11	3.20	35.2	squash
(2) Beans										
- dry season	9	0.50	4.5	20	0.90	18.0	11	0.40	13.5	peanuts
- SALT, wet		-			-			-		
(3) Rootcrops	13	2.00	26.0	11	6.80	74.8	-2	4.80	48.8	sweet potato
Sub-total:	22		30.5	42		128.0	20		97.5	
3. Tree Crops										
(1) Coconut										
- existing	86	0.50	43.0	34	0.80	27.2	-52	0.30	-15.8	
- supplemental planting		-		52	2.50	130.0	52	2.50	130.0	
(2) Banana	12	2.20	26.4	21	10.0	210.0	9	7.80	183.6	
(3) Mango		-			-			-		
(4) Fruit		-			-			-		
(5) Cacao		-			-			-		
(6) Abaca	17	0.30	5.1	26	1.30	33.8	9	1.00	28.7	
Sub-total:	115		74.5	133		401.0	18		326.5	
4. Forest Trees										
(1) Nurse Trees *		-			-			-		
(2) Forest Trees (1) *		-			-			-		
(3) Forest Trees (2) *		-			-			-		
(4) Forest Trees (3) *		-			-			-		
(5) Hedgerows		-			-			-		
Sub-total:	0		0	0		0	0		0	
Total(ex. forest trees):	214		143	247		763	33		620	

Remarks: -...not available

*...yield unit = cu.m

Source: Survey of This Study Team

Table K.2-8 Comparison of Crops & Crop Production without & with Project (1)

Case I.

Site: Reg. X. Bukidnon, Malaybalay, Silae

Item	(Present)			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	7	1.30	9.1	-	-	-	-7	-1.30	-9.1	
- dry season	3	1.20	3.6	-	-	-	-3	-1.20	-3.6	
Paddy, irrigated										
- wet season	-	-	-	30	4.90	147.0	30	4.90	147.0	
- dry season	-	-	-	11	5.50	60.5	11	5.50	60.5	
sub-total:	10		12.7	41		207.5	31		194.8	
(2) Corn										
- wet season	68	1.30	88.4	45	4.00	180.0	-23	2.70	91.6	
- dry season	65	0.50	32.5	38	4.00	152.0	-29	3.50	111.5	
- diver, dry	4	1.80	7.2	-	-	-	-4	-1.80	-7.2	
- SALT, dry	-	-	-	9	4.00	36.0	9	4.00	36.0	
sub-total:	137		128.1	90		368.0	-47		231.9	
Sub-total:	147		140.8	131		567.5	-16		426.7	
2. Vegetables										
(1) Vegetables										
- wet season	-	-	-	-	-	-	-	-	-	
- wet season	-	-	-	-	-	-	-	-	-	
- dry season	3	7.50	22.5	-	-	-	-3	-7.50	-22.5	squash
(2) Beans										
- dry season, diver	-	-	-	14	0.90	12.6	14	0.90	12.6	mungbean
- wet season, diver, SALT	-	-	-	13	0.90	11.7	13	0.90	11.7	mungbeans
(3) Rootcrops, diver, SALT	-	-	-	13	0.90	11.7	13	0.90	11.7	peanut
Sub-total:	3		22.5	40		36.0	37		13.5	
3. Trees										
(1) Coconut										
- existing	-	-	-	-	-	-	-	-	-	
- supplemental planting	-	-	-	-	-	-	-	-	-	
(2) Banana	-	-	-	-	-	-	-	-	-	
(3) Mango	-	-	-	-	-	-	-	-	-	
(4) Fruit	-	-	-	34	6.00	204.0	34	6.00	204.0	durian
(5) Cacao	-	-	-	-	-	-	-	-	-	
(6) Abaca	-	-	-	-	-	-	-	-	-	
(7) Coffee	-	-	-	-	-	-	-	-	-	
Sub-total:	0		0.0	34		204.0	34		204.0	
4. Forest Trees										
(1) Nurse Tree *	-	-	-	8		72.0	8		72.0	kakawate
(2) Forest Trees (1) *	-	-	-	13		1,082	13		1,082	gmelina
(3) Forest Trees (2) *	-	-	-	26		2,420	26		2,420	mahogany
(4) Forest Trees (3) *	-	-	-	26		2,628	26		2,628	bagras
(5) Heagerows	-	-	-	-	-	-	0		0	flemingia
Sub-total:	0		0	73		6,200	73		6,200	
Total(ex. forest trees):	150		163	205		808	55		644	

Remarks: -...not available

*...yield unit = cu.m

Source: Survey of This Study Team

Table K.2-8 Comparison of Crops & Crop Production without & with Project (2)

Case II.

Site: Reg. X. Bukidnon, Malaybalay, Silae

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	7	1.30	9.1	-			-7	-1.30	-9.1	
- dry season	3	1.20	3.6	-			-3	-1.20	-3.6	
Paddy, irrigated										
- wet season		-		30	4.90	147.0	30	4.90	147.0	
- dry season		-		11	5.50	60.5	11	5.50	60.5	
sub-total:	10		12.7	41		207.5	31		194.8	
(2) Corn										
- wet season	68	1.30	88.4	38	4.00	152.0	-30	2.70	63.6	
- dry season	65	0.50	32.5	38	4.00	144.0	-29	3.50	111.5	
- diver, dry	4	1.80	7.2	-			-4	-1.80	-7.2	
- SALT, dry		-		2	4.00	8.0	2	4.00	8.0	
sub-total:	137		128.1	76		304.0	-61		175.9	
Sub-total:	147		140.8	117		511.5	-30		370.7	
2. Vegetables										
(1) Vegetables										
- wet season		-		-				-		
- wet season		-		-				-		
- dry season	3	7.50	22.5	-			-3	-7.50	-22.5	squash
(2) Beans										
- dry season, diver		-		14	0.90	12.6	14	0.90	12.6	mungbean
- wet season, diver, SALT		-		10	0.90	9.0	10	0.90	9.0	mungbeans
(3) Rootcrops, diver, SALT		-		1	0.90	0.9	1	0.90	0.9	peanut
Sub-total:	3		22.5	25		22.5	22		-0.0	
3. Trees										
(1) Coconut										
- existing		-		-				-		
- supplemental planting		-		-				-		
(2) Banana		-		-				-		
(3) Mango		-		-				-		
(4) Fruit		-		8	6.00	48.0	8	6.00	48.0	durian
(5) Cacao		-		-				-		
(6) Abaca		-		-				-		
(7) Coffee		-		-				-		
Sub-total:	0		0.0	8		48.0	8		48.0	
4. Forest Trees										
(1) Nurse Tree *		-		2		18.0	2		18.0	kakawate
(2) Forest Trees (1) *		-		1		84	1		84	gmelina
(3) Forest Trees (2) *		-		38		3,538	38		3,538	mahogany
(4) Forest Trees (3) *		-		38		3,538	38		3,538	bagras
(5) Heagerows		-		1		0.0	1		0	flemingia
Sub-total:	0		0	79		7,178	79		7,178	
Total(ex. forest trees):	150		163	150		582	0		419	

Remarks: -...not available

*...yield unit = cu m

Source: Survey of This Study Team

Table K.2-8 Comparison of Crops & Crop Production without & with Project (3)

Case III.

Site: Reg. X. Bukidnon, Malaybalay, Silae

Item	(Present) Without			With			Difference			Remarks
	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	Area (Ha)	Yield (t/ha)	Prod'n (t)	
1. Crops										
(1) Paddy, rainfed										
- wet season	7	1.30	9.1	-			-7	-1.30	-9.1	
- dry season	3	1.20	3.6	-			-3	-1.20	-3.6	
Paddy, Irrigated										
- wet season		-		30	4.90	147.0	30	4.90	147.0	
- dry season		-		11	5.50	60.5	11	5.50	60.5	
sub-total:	10		12.7	41		207.5	31		194.8	
(2) Corn										
- wet season	68	1.30	88.4	36	4.00	144.0	-32	2.70	55.6	
- dry season	65	0.50	32.5	36	4.00	144.0	-29	3.50	111.5	
- diver, dry	4	1.80	7.2	-			-4	-1.80	-7.2	
- SALT, dry		-		-			0	0.00	0.0	
sub-total:	137		128.1	72		288.0	-65		159.9	
Sub-total:	147		140.8	113		495.5	-34		354.7	
2. Vegetables										
(1) Vegetables										
- wet season		-		-			-			
- wet season		-		-			-			
- dry season	3	7.50	22.5	-			-3	-7.50	-22.5	squash
(2) Beans										
- dry season, diver		-		14	0.90	12.6	14	0.90	12.6	mungbean
- wet season, diver		-		9	0.90	8.1	9	0.90	8.1	mungbeans
(3) Rootcrops, diver		-		9	0.90	8.1	9	0.90	8.1	peanut
Sub-total:	3		22.5	32		28.8	29		6.3	
3. Trees										
(1) Coconut										
- existing		-		-			-			
- supplemental planting		-		-			-			
(2) Banana		-		-			-			
(3) Mango		-		-			-			
(4) Fruit		-		-			-			
(5) Cacao		-		-			-			
(6) Abaca		-		-			-			
(7) Coffee		-		-			-			
Sub-total:	0		0.0	0		0.0	0		0.0	
4. Forest Trees										
(1) Nurse Tree *		-		-			-			
(2) Forest Trees (1) *		-		-			-			
(3) Forest Trees (2) *		-		-			-			
(4) Forest Trees (3) *		-		-			-			
(5) Heagerows		-		-			-			
Sub-total:	0		0	0		0	0		0	
Total(ex. forest trees):	150		163	145		524	-5		361	

Remarks: -...not available

*...yield unit = cu.m

Source: Survey of This Study Team

Table K.2-9 Proposed Post-Harvest & Agro-Industry Plan

	Reg. CAR Abra Bangued Sappa-ac	Reg. II Quirino Maddela Cofcaville	Reg. VIII Leyte Hilongos Marangog	Reg. X Bukidnon Malaybalay Sila
1. Agricultural machinery				
(1) Tractor	-	1	-	-
(2) Hand Tractor	-*	2	1	1
(3) Sprayer	6	12	5	3
(4) Animal Drawn Plow	6*	3	3	3
(5) Comb-Tooth Harrow	6*	3	3	3
(6) Animal Drawn Sledge	6*	3	3	3
2. Post-Harvest & Agro-Industry Facilities				
(1) Multi-Purpose Dryer	2	2	2	1
(for paddy and corn)	(2)	(2)	(1)	(1)
(for others)	-	-	(1)	(0)
(2) Mechanical Dryer	1	1	1	1
(3) Reaper	2	2	-	1
(4) Rice Thresher (foot type)	7	3	-*	-
(5) Rice Thresher (w/prime mover)	1	1	1	1
(6) Winnowing	7	3	-*	-
(7) Warehouse with solar dryer	1	2	1	1
(8) Rice Agro-Industry Center	1	1	-	-
Warehouse with solar dryer	(1)	(1)	-	-
Rice Mill (one pass type)	(0)	(1)	-	-
Quality control equipment	(1)	(1)	-	-
(9) Corn Sheller (manual type)	5	6	2	-*
(10) Corn Agro-Industry Center	-	1	-	1
Warehouse with solar dryer	-	(1)	-	(1)
Corn Mill	-	(1)	-	(1)
Corn Sheller (w/prime mover)	-	(1)	-	(1)
Quality control equipment	-	(1)	-	(1)

Remarks:

- ...not applicable

(1) ...included in above item.

* ...revised plan compared with M/P depending on site conditons

Table K.2-10 Estimated Price for Post-Harvest & Agro-Industry Facilities (1)

Description	Specification	Unit Price (P)		Estimated Unit Price (P)	Remarks
		as of 1993	as of Dec 1996		
I. Agricultural Machinery					
(1) Tractor			1,433,300	1,433,500	
Tractor	Diesel, 50Hp		(1,177,000)		
Disc Harrow			(155,000)		
Disc Plow			(85,500)		
Trailer			(15,800)		
(2) Hand Tractor			34,300	34,500	
Tractor	Medium, 1.0-1.5 ha/day Required: 11Hp with Moldboard plow Comb-tooth harrow Rubber tire Trailer Steel cage wheel Engine and driving accessories		(16,500) (1,800) (3,000) (13,000)		
(3) Sprayer	Knapsack, Plastic, 16 litre Manual		2,850	3,000	
(4) Animal Drawn Plow	Steel made L2100xW180xH850		1,200	1,500	
(5) Comb-Tooth Harrow	Steel made L1400xW280xH1000		1,000	1,000	
(6) Animal Drawn Sledge	Bamboo made L2500xW1000xH1000		300	500	
II. Post-Harvest & Agro-Industry Facilities					
(1) Multi-Purpose Dryer			395,500	395,500	
Solar Dryer	15x30m, 450 m2 100-150 cav/day drying		(342,000)		
Storage shed	3x5m, 15 m2		(43,500)		
Basket Pole	1 set, (2 poles), wood made		(10,000)		
(2) Mechanical Dryer			106,000	106,000	
Dryer	Falt bed type Required 8Hp gasoline or 3Hp motor. one ton/batch				
(3) Reaper	Steel made with gasoline engine L2180xW170xH900		90,000	90,000	
(4) Rice Thresher (foot type)	Steel and wood, 250 kg/hr L860xW750xH810	1,600	1,867	2,000	
(5) Rice Thresher			48,500	48,500	
Thresher	Axial flow, Required 7Hp 1.0 - 1.2 t/hr L1800xW1500xH1700		(35,000)		
Engine	Diesel, 12HP		(13,500)		
(6) Winnowing	Steel and wood Manual L630xW430xH1220	1,500		2,000	
(7) Warehouse with Solar Dryer			659,000	659,000	
Warehouse	6x16m, 96 m2 1,200 cav/storage		(307,000)		
Solar Dryer	15x30 m, 450 m2 100-150 cav/day drying		(342,000)		
Basket Pole	1 set, (2 poles), wood made		(10,000)		

Table K.2-10 Estimated Price for Post-Harvest & Agro-Industry Facilities (2)

Description	Specification	Unit Price (P)		Estimated Unit Price (P)	Remarks
		as of 1993	as of Dec. 1996		
(8)Rice Agro-Industry Center					
Warehouse	6x16m, 96 m2 1,200 cav/storage		825,000 (307,000)	864,000	
Solar Dryer	15x30 m, 450 m2 100-150 cav/day drying		(342,000)		
Basket Pole	1 set, (2 poles), wood made		(10,000)		
Rice Mill			(145,000)		
Mill	Input 6 cav/hr Required 10Hp motor or engine 15Hp		((77,000))		
Engine	Diesel, 19Hp		((68,000))		
Weighing Scale	100kg, 0.5kg accuracy		12,500	(incl. above)	
Moisture Meter	resistance, for paddy Range: 11 - 35%		25,000	(incl. above)	
Crack Inspector	W80xD90xH19 grass (see through) type		1,000	(incl. above)	
Wooden Pallets	30 pallets/set		(21,000)		
(9)Corn Sheller (handy type)					
	Manual, 100 - 150kg/hr		12,500	12,500	
(10)Corn Agro-Industry Center					
Warehouse	6x16m, 96 m2 1,200 cav/storage		840,000 (307,000)	890,000	
Solar Dryer	15x30 m, 450 m2 100-150 cav/day drying		(342,000)		
Basket Pole	1 set, (2 poles), wood made		(10,000)		
Corn Mill			(160,000)		
Mill	Hammer type Capacity: 0.3-0.4 t/hr Required 18Hp		((75,000))		
Engine	Diesel 18HP		((85,000))		
Corn Sheller			(44,000)		
Sheller	Double feeder Capacity: 1.0 - 1.2 t/hr L1140xW110xH1240 Required 5Hp		((15,000))		
Engine	Diesel 5HP		((29,000))		
Weighing Scale	100kg, 0.5kg accuracy		12,500	(incl. above)	
Moisture Meter	Capacitance, for corn and paddy Corn range: 6 - 30%		37,500	(incl. above)	
Wooden Pallets	30 pallets/set		(21,000)		

Source: (1) Agricultural Mechanization Development Program
College of Engineering and Agro-Industrial Technology
University of the Philippines, Los Banos (UPLB)
(2) Agricultural Machinery Manufacturers and Distributors Association Foundation, Inc.
(3) Survey of This Study Team

Table K.2-11 Durable Year & O/M Cost of Post-Harvest and Agro-Industry Facilities

Description	Estimated Unit Price (P)	Durable Year (year)	O & M Cost		Operation Nr of men (person)
			maint. (P/year)	worn part (P/year)	
I. Agricultural Machinery					
(1) Tractor					
Tractor	1,177,000	10	35,310	-	1
Disc Harrow	155,000	7	4,650	-	
Disc Plow	85,500	7	2,565	-	
Trailer	15,800	7	474	-	
Sub-total:	1,433,300		42,999		1
(2) Hand Tractor	34,300	7	1,029	-	
(3) Sprayer	2,900	5	87	-	
(4) Animal Drawn Plow	1,200	5	36	-	
(5) Comb-Tooth Harrow	1,000	5	30	-	
(6) Animal Drawn Sledge	500	5	15	-	
II. Post-Harvest & Agro-Industry Facilities					
(1) Multi-Purpose Dryer	395,500	30	-	-	
(2) Mechanical Dryer	106,000	7	3,180	-	1
(3) Reaper	90,000	5	2,700	-	1
(4) Rice Thresher (foot type)	1,900	5	57	-	
(5) Rice Thresher					
Thresher	35,000	5	1,050	-	1
Engine	13,500	7	405	-	
Sub-total:	48,500				
(6) Winnower	2,000	7	60	-	
(7) Warehouse with Solar Dryer	659,000	30	-	-	
(8) Rice Agro-Industry Center	(863,000)				
Warehouse	659,000	30	-	-	
Rice Mill	(145,000)				2
Mill *	77,000	10	2,310	2,310	
Engine	68,000	7	2,040	-	
Weighing Scale	12,500	7	-	-	
Moisture Meter	25,000	5	-	-	
Crack Inspector	1,000	10	-	-	
Wooden Pallets	21,000	5	-	-	
Sub-total:	863,500		4,350	2,310	
(9) Corn Sheller (handy type)	12,500	7	375	-	
(10) Corn Agro-Industry Center	(934,000)				
Warehouse	659,000	30	-	-	
Corn Mill	(160,000)				
Mill *	75,000	7	2,250	2,250	2
Engine	85,000	7	2,550	-	
Corn Sheller	(44,000)				
Sheller	15,000	5	450	-	
Engine	29,000	7	870	-	
Weighing Scale	12,500	7	-	-	
Moisture Meter	37,500	5	-	-	
Wooden Pallets	21,000	5	-	-	
Sub-total:	934,000		6,120	2,250	
Remarks: * mark = needs one operator and one assistant.					

Table K.2-12 Investment & O/M Cost of Post-Harvest and Agro-Industry Facilities (1)

Reg. CAR: Abra, Bangued, Sappa-ac

Reg. CAR: Abra, Bangued, Sappa-ac								
Description	Estimated	Nr of	Investment Cost				O & M Cost	
	Unit Price (P'000)	Equip ment	5-year (P'000)	7-year (P'000)	10-year (P'000)	30-year (P'000)	(P'000/ year)	
I. Agricultural Machinery								
(1) Tractor	1,177.0	0	-	-	0.0	-	0.0	
Disc Harrow	155.0	0	-	0.0	-	-	0.0	
Disc Plow	85.5	0	-	0.0	-	-	0.0	
Trailer	15.8	0	-	0.0	-	-	0.0	
Sub-total:	1,433.3							
(2) Hand Tractor	34.3	0	-	0.0	-	-	0.0	
(3) Sprayer	2.9	6	17.4	-	-	-	0.5	
(4) Animal Drawn Plow	1.2	6	7.2	-	-	-	0.2	
(5) Comb-Tooth Harrow	1.0	6	6.0	-	-	-	0.2	
(6) Animal Drawn Sledge	0.5	6	3.0	-	-	-	0.1	
II. Post-Harvest & Agro-Industry Facilities								
(1) Multi-Purpose Dryer	395.5	2	-	-	-	791.0	-	
(2) Mechanical Dryer	106.0	1	-	0.0	-	-	3.2	
(3) Reaper	90.0	2	180.0	-	-	-	5.4	
(4) Rice Thresher (foot type)	1.9	7	13.3	-	-	-	0.4	
(5) Rice Thresher	35.0	1	35.0	-	-	-	1.1	
Engine	13.5	1	-	13.5	-	-	0.4	
Sub-total:	48.5							
(6) Winnower	2.0	7	-	14.0	-	-	0.4	
(7) Warehouse	659.0	1	-	-	-	659.0	-	
(8) Rice Agro-Industry Center								
Warehouse	659.0	1	-	-	-	659.0	-	
Rice Mill	77.0	0	-	-	0.0	-	0.0	
Engine	68.0	0	-	0.0	-	-	0.0	
Weighing Scale	12.5	1	-	12.5	-	-	-	
Moisture Meter	25.0	1	25.0	-	-	-	-	
Crack Inspector	1.0	1	-	-	1.0	-	-	
Wooden Pallets	21.0	1	21.0	-	-	-	-	
Sub-total:	863.5							
(9) Corn Sheller (handy type)	12.5	5	-	62.5	-	-	1.9	
(10) Corn Agro-Industry Center								
Warehouse	659.0	0	-	-	-	0.0	0.0	
Corn Mill	75.0	0	-	0.0	-	-	0.0	
Engine	85.0	0	-	0.0	-	-	0.0	
Corn Sheller	15.0	0	0.0	-	-	-	0.0	
Engine	29.0	0	-	0.0	-	-	0.0	
Weighing Scale	12.5	0	-	0.0	-	-	-	
Moisture Meter	37.5	0	0.0	-	-	-	-	
Wooden Pallets	21.0	0	0.0	-	-	-	-	
Sub-total:	934.0							
Total:			307.9	102.5	1.0	2,109.0	13.7	
First Investment Cost:						2,520.4		
Yearly sub-total:			61.6	14.6	0.1	70.3		
Yearly Cost (incl. O&M):						160.4		
Remarks: - ... not applicable								

Table K.2-12 Investment & O/M Cost of Post-Harvest and Agro-Industry Facilities (2)

Reg. II: Quirino, Maddela, Cofcaville

Description	Estimated Unit Price (P'000)	Nr of Equip ment	5-year (P'000)	7-year (P'000)	10-year (P'000)	30-year (P'000)	O & M Cost (P'000/ year)
I. Agricultural Machinery							
(1) Tractor	1,177.0	1	-	-	0.0	-	35.3
Disc Harrow	155.0	1	-	0.0	-	-	4.7
Disc Plow	85.5	1	-	0.0	-	-	2.6
Trailer	15.8	1	-	0.0	-	-	0.5
Sub-total:	1,433.3						
(2) Hand Tractor	34.3	2	-	68.6	-	-	2.1
(3) Sprayer	2.9	12	34.8	-	-	-	1.0
(4) Animal Drawn Plow	1.2	3	3.6	-	-	-	0.1
(5) Corn-Tooth Harrow	1.0	3	3.0	-	-	-	0.1
(6) Animal Drawn Sledge	0.5	3	1.5	-	-	-	0.0
II. Post-Harvest & Agro-Industry Facilities							
(1) Multi-Purpose Dryer	395.5	2	-	-	-	791.0	-
(2) Mechanical Dryer	106.0	1	-	0.0	-	-	3.2
(3) Reaper	90.0	2	180.0	-	-	-	5.4
(4) Rice Thresher (foot type)	1.9	3	5.7	-	-	-	0.2
(5) Rice Thresher	35.0	1	35.0	-	-	-	1.1
Engine	13.5	1	-	13.5	-	-	0.4
Sub-total:	48.5						
(6) Winnowing	2.0	3	-	6.0	-	-	0.2
(7) Warehouse	659.0	2	-	-	-	1,318.0	-
(8) Rice Agro-Industry Center							
Warehouse	659.0	1	-	-	-	659.0	-
Rice Mill	77.0	1	-	-	77.0	-	4.6
Engine	68.0	1	-	68.0	-	-	2.0
Weighing Scale	12.5	1	-	12.5	-	-	-
Moisture Meter	25.0	1	25.0	-	-	-	-
Crack Inspector	1.0	1	-	-	1.0	-	-
Wooden Pallets	21.0	1	21.0	-	-	-	-
Sub-total:	863.5						
(9) Corn Shelter (handy type)	12.5	6	-	75.0	-	-	2.3
(10) Corn Agro-Industry Center							
Warehouse	659.0	1	-	-	-	659.0	-
Corn Mill	75.0	1	-	75.0	-	-	4.5
Engine	85.0	1	-	85.0	-	-	2.6
Corn Shelter	15.0	1	15.0	-	-	-	0.5
Engine	29.0	1	-	29.0	-	-	0.9
Weighing Scale	12.5	1	-	12.5	-	-	-
Moisture Meter	37.5	1	37.5	-	-	-	-
Wooden Pallets	21.0	1	21.0	-	-	-	-
Sub-total:	934.0						
Total:			383.1	445.1	78.0	3,427.0	74.0
First Investment Cost:						4,333.2	
Yearly sub-total:			76.6	63.6	7.8	114.2	
Yearly Cost (incl. O&M):						336.2	
Remarks: - not applicable							

Table K.2-12 Investment & O/M Cost of Post-Harvest and Agro-Industry Facilities (3)

Reg. VIII, Leyte, Hilongos, Marangog

Reg VIII. Leyte, Marangog							
Description	Estimated	Nr of	Investment Cost				O & M Cost
	UnitPrice (P'000)	Equip ment	5-year (P'000)	7-year (P'000)	10-year (P'000)	30-year (P'000)	(P'000/ year)
I. Agricultural Machinery							
(1) Tractor	1,177.0	0	-	-	0.0	-	0.0
Disc Harrow	155.0	0	-	0.0	-	-	0.0
Disc Plow	85.5	0	-	0.0	-	-	0.0
Trailer	15.8	0	-	0.0	-	-	0.0
Sub-total:	1,433.3						
(2) Hand Tractor	34.3	1	-	34.3	-	-	1.0
(3) Sprayer	2.9	5	14.5	-	-	-	0.4
(4) Animal Drawn Plow	1.2	3	3.6	-	-	-	0.1
(5) Comb-Tooth Harrow	1.0	3	3.0	-	-	-	0.1
(6) Animal Drawn Sledge	0.5	3	1.5	-	-	-	0.0
II. Post-Harvest & Agro-Industry Facilities							
(1) Multi-Purpose Dryer	395.5	2	-	-	-	791.0	-
(2) Mechanical Dryer	106.0	1	-	0.0	-	-	3.2
(3) Reaper	90.0	0	0.0	-	-	-	0.0
(4) Rice Thresher (foot type)	1.9	0	0.0	-	-	-	0.0
(5) Rice Thresher	35.0	1	35.0	-	-	-	1.1
Engine	13.5	1	-	13.5	-	-	0.4
Sub-total:	48.5						
(6) Winnower	2.0	0	-	0.0	-	-	0.0
(7) Warehouse	659.0	1	-	-	-	659.0	-
(8) Rice Agro-Industry Center							
Warehouse	659.0	0	-	-	-	0.0	-
Rice Mill	77.0	0	-	-	0.0	-	0.0
Engine	68.0	0	-	0.0	-	-	0.0
Weighing Scale	12.5	0	-	0.0	-	-	-
Moisture Meter	25.0	0	0.0	-	-	-	-
Crack Inspector	1.0	0	-	-	0.0	-	-
Wooden Pallets	21.0	0	0.0	-	-	-	-
Sub-total:	863.5						
(9) Corn Sheller (handy type)	12.5	2	-	25.0	-	-	0.8
(10) Corn Agro-Industry Center							
Warehouse	659.0	0	-	-	-	0.0	-
Corn Mill	75.0	0	-	0.0	-	-	0.0
Engine	85.0	0	-	0.0	-	-	0.0
Corn Sheller	15.0	0	0.0	-	-	-	0.0
Engine	29.0	0	-	0.0	-	-	0.0
Weighing Scale	12.5	0	-	0.0	-	-	-
Moisture Meter	37.5	0	0.0	-	-	-	-
Wooden Pallets	21.0	0	0.0	-	-	-	-
Sub-total:	934.0						
Total:			57.6	72.8	0.0	1,450.0	7.1
First Investment Cost:						1,580.4	
Yearly sub-total:			11.5	10.4	0.0	48.3	
Yearly Cost (incl. O&M):						77.3	
Remarks: - ... not applicable							

Table K.2-12 Investment & O/M Cost of Post-Harvest and Agro-Industry Facilities (4)

Reg. X. Bukidnon, Malaybalay, Silae

Description		Estimated Unit Price (P'000)	Nr of Equip ment	Investment Cost				O & M Cost (P'000/ year)
				5-year (P'000)	7-year (P'000)	10-year (P'000)	30-year (P'000)	
I. Agricultural Machinery								
(1) Tractor		1,177.0	0	-	-	0.0	-	0.0
	Disc Harrow	155.0	0	-	0.0	-	-	0.0
	Disc Plow	85.5	0	-	0.0	-	-	0.0
	Trailer	15.8	0	-	0.0	-	-	0.0
	Sub-total:	1,433.3						
(2) Hand Tractor		34.3	1	-	34.3	-	-	1.0
(3) Sprayer		2.9	3	8.7	-	-	-	0.3
(4) Animal Drawn Plow		1.2	3	3.6	-	-	-	0.1
(5) Comb-Tooth Harrow		1.0	3	3.0	-	-	-	0.1
(6) Animal Drawn Sledge		0.5	3	1.5	-	-	-	0.0
II. Post-Harvest & Agro-Industry Facilities								
(1) Multi-Purpose Dryer		395.5	1	-	-	-	395.5	-
(2) Mechanical Dryer		106.0	1	-	0.0	-	-	3.2
(3) Reaper		90.0	1	90.0	-	-	-	2.7
(4) Rice Thresher (foot type)		1.9	0	0.0	-	-	-	0.0
(5) Rice Thresher		35.0	1	35.0	-	-	-	1.1
	Engine	13.5	1	-	13.5	-	-	0.4
	Sub-total:	48.5						
(6) Winnower		2.0	0	-	0.0	-	-	0.0
(7) Warehouse		659.0	1	-	-	-	659.0	-
(8) Rice Agro-Industry Center								
	Warehouse	659.0	0	-	-	-	0.0	-
	Rice Mill	77.0	0	-	-	0.0	-	0.0
	Engine	68.0	0	-	0.0	-	-	0.0
	Weighing Scale	12.5	0	-	0.0	-	-	-
	Moisture Meter	25.0	0	0.0	-	-	-	-
	Crack Inspector	1.0	0	-	-	0.0	-	-
	Wooden Pallets	21.0	0	0.0	-	-	-	-
	Sub-total:	863.5						
(9) Corn Sheller (handy type)		12.5	0	-	0.0	-	-	0.0
(10) Corn Agro-Industry Center								
	Warehouse	659.0	1	-	-	-	659.0	-
	Corn Mill	75.0	1	-	75.0	-	-	4.5
	Engine	85.0	1	-	85.0	-	-	2.6
	Corn Sheller	15.0	1	15.0	-	-	-	0.5
	Engine	29.0	1	-	29.0	-	-	0.9
	Weighing Scale	12.5	1	-	12.5	-	-	-
	Moisture Meter	37.5	1	37.5	-	-	-	-
	Wooden Pallets	21.0	1	21.0	-	-	-	-
	Sub-total:	934.0						
Total:				215.3	249.3	0.0	1,713.5	17.2
First Investment Cost:							2,178.1	
Yearly sub-total:				43.1	35.6	0.0	57.1	
Yearly Cost (incl. O&M):							153.0	
Remarks: - ... not applicable								

Table K2-13 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (1)

Rep. CAR, Am, Benguet, Siquibo	Facilities	Benefits Items	Defers Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P000)	Defers Value/Year Formula	Value(P000)
1. Agricultural Machinery	(1) Tractor	1. Reduction of tilling hours. 1/20 compared with manual. 2. Available to deep cultivation. 3. Reduction of hauling hours. 1/50 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	0						
	(2) Hand Tractor	1. Reduction of tilling hours. 1/10 compared with manual. 2. Reduction of hauling hours. 1/20 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	0						
	(3) Sprayer	1. Increasing of yield. 1/2 compared with manual.	1. Require O & M cost.	6 600ha 6 600ha		40day/5000 (hired, half chance)	60x145000x0.5=	6.0		
	(4) Animal Drawn Plow	1. Reduction of tilling hours. 1/2 compared with manual.	1. Require O & M cost.	6 600ha		30day/4000 (hired, half chance)	60x120000x0.5=	3.6		
	(5) Corn Coot Harrow	1. Reduction of tilling hours. 1/2 compared with manual.	1. Require O & M cost.	6 600ha		20day/4000 (hired, half chance)	60x145000x0.5=	10.0		
	(6) Animal Drawn Sledge	1. Reduction of hauling hours. 1/10 compared with manual.	1. Require O & M cost.	6 600ha		20day/4000 (hired, half chance)	60x145000x0.5=	25.6		
	Sub-total									
	2. Post-Harvest & Agro-Industry Facilities									
	(1) Multi-Purpose Drier	1. Reduction of drying hours. 1/2 compared with no treatment. 2. Improvement of drying quality. up to 14% of moisture content.	1. Require land 2500t daily 2500t corn (included in the above) (included in the above) (included in the above)	2		20%40.50PS (half chance) 2500.000x0.25x0.5x0.5=	250.000x0.25x0.5x0.5=	60.0		
	(2) Mechanical Drier (for seed)	3. Improvement of purity quality. up to 95% of purity 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 1. Reduction of drying hours. 1/10 compared with no treatment.	1. Require land & house. 2. Require fuel 3. Require electricity or fuel. 4. Require O & M cost.	1		80day/5000 (hired, half chance) 10day/5000 (hired, half chance) 10day/5000 (hired, half chance)	80x145000x0.5=	74.9	2 times x1200x0.75 = 1800 1 time x1200x0.75 = 900 2 times x1200x0.75 = 1800 1 time x1200x0.75 = 900	1.1 0.8 0.1 0.1
	(3) Reaper	2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 6. Improvement of mixed kernel. 7. Available to drying for any kind of seed except of vegetable seeds.	1. Require fuel 2. Require O & M cost.	2		20day/5000 (hired, half chance)	200x145000x0.5=	52.0	200x145000x0.25x0.5x0.45=	4.2
	(4) Rice Thresher (foot type)	1. Reduction of threshing hours. 1/2 compared with manual. 1. Reduction of threshing hours. 1/10 compared with manual. 2. Reduction of heavy work. 3. Reduction of winnowing work. 4. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost 1. Require fuel. 2. Require O & M cost.	7 1		10day/5000 (hired, half chance) 10day/5000 (hired, half chance)	100x145000x0.5=	31.3	100x145000x0.25x0.5x0.5=	12.0
	(5) Rice Thresher (with paddy mover)	1. Reduction of threshing hours. 1/2 compared with manual. 1. Reduction of threshing hours. 1/10 compared with manual. 2. Reduction of heavy work. 3. Reduction of winnowing work. 4. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost 1. Require fuel. 2. Require O & M cost.	7 1		10day/5000 (hired, half chance) 10day/5000 (hired, half chance)	100x145000x0.5=	23.0	100x145000x0.25x0.5x0.5=	1.7
	(6) Winnower	1. Reduction of winnowing work. 1/10 compared with manual. 2. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost	7		10day/5000 (hired, half chance)	100x145000x0.5=	18.8	100x145000x0.25x0.5x0.5=	3.0

Table K.2-13 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (2)

Reg. CAR, Azra, Benguet, Sapponec	Facilities	Benefits Items	Deficits Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P000)	Deficits Value/Year Formula	Value(P000)
(7) Warehouse with Solar Dryer		1. Reduction of drying hours, 1/5 compared with no pavement.	1. Require land.	1	50t paddy	20% of 50tPB (half increase)	50,000x0.2x0.5x6x0.5= (half chance)	20.0		
		2. Improvement of drying quality, up to 14% of moisture content.				20% of 50tPB (half increase)	50,000x0.2x0.5x6x0.5= (half chance)	15.0		
		3. Improvement of purity quality, up to 95% of purity.				(included in the above)				
		4. Improvement of discolored kernel, up to 3% of discolored kernel.				(included in the above)				
		5. Improvement of immature kernel, up to 10% of immature kernel.				(included in the above)				
		6. Storing for emergency food storage, up to 20% higher price.				100t paddy	100,000x0.2x0.5x6x0.5= (half increase)	40.0		
		7. Store to sell up to better price, up to 20% higher price.				100t corn	100,000x0.2x0.5x6x0.5= (half increase)	30.0		
(8) Rice Agro-Industry Center	Warehouse with Solar Dryer	1. Reduction of drying hours, 1/5 compared with no pavement.	1. Require land.	1	50t paddy	20% of 50tPB (half increase)	50,000x0.2x0.5x6x0.5= (half chance)	20.0		
		2. Improvement of drying quality, up to 14% of moisture content.				20% of 50tPB (half increase)	50,000x0.2x0.5x6x0.5= (half chance)	15.0		
		3. Improvement of purity quality, up to 95% of purity.				(included in the above)				
		4. Improvement of discolored kernel, up to 3% of discolored kernel.				(included in the above)				
		5. Improvement of immature kernel, up to 10% of immature kernel.				(included in the above)				
		6. Storing for emergency food storage, up to 20% higher price.				100t paddy	100,000x0.2x0.5x6x0.5= (half increase)	40.0		
		7. Store to sell up to better price, up to 20% higher price.				100t corn	100,000x0.2x0.5x6x0.5= (half increase)	30.0		
Rice Mill		1. Reduction of milling hours, 1/500 compared with manual, or Reduction of whole rice buying price and transportation hour, buying cost reduction and one time every two months, higher than paddy.	1. Require room 2. Require fuel 3. Required O & M cost.	0	100t paddy	20% of 50tPB (half increase)	100,000x0.2x0.5x6x0.5= (half chance)	40.0		
		2. Increasing selling price of rice, 20% of rice husk and 10% of rice bran.				20% of 50tPB (half increase)	100,000x0.2x0.5x6x0.5= (half chance)	30.0		
		3. Food security for emergency								
		4. Obtaining of by-product								
		5. Improvement of quality, up to 14% moisture content.								
		6. Improvement of selling weight, available to sell on actual weight.								
		7. Controlling of rice crack.								
(9) Corn Shelter (manual type)		1. Reduction of shelling hours, 1/10 compared with manual.	1. Require O & M cost.	5	5x20t	20% of 50tPB (half increase)	5x20x0.2x0.5x6x0.5= (half chance)	6.5		
		2. Reduction of hard work.								
(10) Corn Agro-Industry Center	Warehouse with Solar Dryer	1. Reduction of drying hours, 1/5 compared with no pavement.	1. Require land.	0						
		2. Improvement of drying quality, up to 14% of moisture content.								
		3. Improvement of purity quality, up to 97% of purity.								
		4. Improvement of drying quality, up to 14% of moisture content.								
		5. Improvement of purity quality, up to 97% of purity.								
		6. Storing for emergency food storage, up to 20% higher price.								
		7. Store to sell up to better price, up to 20% higher price.								

Table K-2-13 Estimated Benefits from Distribution of Postharvest & Agro-Industry Facilities (2)

Reg. CAR, Abia, Benue, Sapele	Facilities	Benefits Items	Defects Item	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P'000)	Defect Value/Year Formula	Value(P'000)
		4. Improvement of colored kernel up to 3% of colored kernel. 5. Food security for emergency. 6. Store to sell up to better price up to 20% higher price								
	• Corn Mill	1. Reduction of milling hours, 1/500 compared with manual, or 2. Reduction of milled corn buying price and transportation hour, 30% cost reduction and one time per month 3. Increasing selling price of corn, 30% higher than grain. 4. Food security for emergency. 5. Culling of feed for livestock.	1. Require room 2. Require fuel 3. Required O & M cost	0						
	• Corn Shelter (manual type)	1. Reduction of milling hours, 1/10 compared with manual. 2. Reduction of hard work.	1. Require O & M cost	0						
	• Quality Control Equipment	1. Improvement of quality up to 14% moisture content. 2. Improvement of selling weight, available to sell on actual weight	1. Require room and table	0						
	• Sub-total							581.4		24.6
	• Total Benefits Grand Total							607.0		24.6
								582.4		

Table K-2-14 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (1)

Facilities	Benefits Items	Defects Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P'000)	Defects Value/Year Formula	Value(P'000)
1. Agricultural Machinery									
(1) Tractor	1. Reduction of farming hours. 1/20 compared with manual. 2. Available to deep cultivation. 3. Reduction of hauling hours. 1/60 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	1	100ha, 2 times, 2 crops	15 day, P1, 200/ha (fixed, half chance)	100x2x2x1,200x0.5=	240.0	15x2x2x0.25x0 xP10.45x0.5=	31.4
(2) Hand Tractor	1. Reduction of farming hours. 1/10 compared with manual. 2. Reduction of hauling hours. 1/20 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	2	10ha, 2 times, 2 crops	10 day, P1, 100/ha (fixed, half chance)	2x10x2x2x1,000x0.5=	40.0	15x2x2x0.25x0 xP10.45x0.5=	16.0
(3) Strayer	1. Increase of yield. 1. Reduction of farming hours. 1/3 compared with manual.	1. Require O & M cost. 1. Require O & M cost.	12 12x5ha 3 3x1ha		4 day, P500 (fixed, half chance)	incl. farming. 3x1x4x500x0.5=	3.0		8.4
(4) Animal Drawn Plow	1. Reduction of farming hours. 1/3 compared with manual.	1. Require O & M cost.	3 3x1ha		3 day, P400 (fixed, half chance)	3x1x3x400x0.5=	1.8		24.0
(5) Comb-Tooth Harrow	1. Reduction of farming hours. 1/3 compared with manual.	1. Require O & M cost.	3 3x1ha		2 day, P400 (fixed, half chance)	3x1x3x400x0.5=	1.8		8.7
(6) Animal Drawn Sledge	1. Reduction of hauling hours. 1/10 compared with manual.	1. Require O & M cost.	3 3x1ha	1501377ha		3x1x1501377x2x400x0.5=	9.6		204.4
Sub-total:									
2. Post-Harvest & Agro-Industry Facilities									
(1) Multi-Purpose Drier	1. Reduction of drying hours. 1/5 compared with no movement. 2. Improvement of drying quality. up to 14% of moisture content.	1. Require land.	2						
	3. Improvement of purity quality. up to 95% of purity. 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 1. Reduction of drying hours. 1/10 compared with no movement.	2. Require fuel. 3. Require electricity or fuel. 4. Require O & M cost.	2550t paddy 2550t corn (included in the above) (included in the above) (included in the above)	20% x 0.5 x P8 (half chance) 20% x 0.5 x P8 (half chance)	2550,000x0.2x0.5x0.5=	2550,000x0.2x0.5x0.5=	80.0		
(2) Mechanical Drier (for seed)	1. Reduction of drying hours. 1/10 compared with no movement. 2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity. 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 6. Improvement of mixed kernel. 7. Available to drying for any kind of seed except of vegetable seeds. 1. Reduction of harvesting hours. 1/15 compared with manual. 2. Reduction of weedy work.	1. Require land & house. 2. Require fuel. 3. Require electricity or fuel. 4. Require O & M cost.	53ha dry year 315ha dry year 27ha big pump basin (including in the above) (including in the above) (including in the above) (including in the above) (including in the above) (including in the above)	4 day, P200/ha 1 day, 300/ha (fixed, half chance)	53x4x200x0.5=	315x1x300x0.5=	13.9	2 times x12x2x0.75x0.4=	1.1
(3) Reaper	1. Reduction of harvesting hours. 1/15 compared with manual. 2. Reduction of weedy work.	1. Require fuel. 2. Require O & M cost.	2 2x20ha		20 day, P200/ha (fixed, half chance)	2x20x20x2x65x0.5=	52.0	2x20x2x0.25x0.45=	4.2
(4) Rice Thresher (foot tread)	1. Reduction of threshing hours. 1/3 compared with manual.	1. Require O & M cost.	3 1x140t		10 day, P500/ha (fixed, half chance)	61x1x10x500x0.5=	19.1		12.0
(5) Rice Thresher (with prime mover)	1. Reduction of threshing hours. 1/10 compared with manual. 2. Reduction of weedy work. 3. Reduction of winnowing work. 4. Improvement of purity quality. up to 95% of purity.	1. Require fuel. 2. Require O & M cost.	1 1x60t		10 day, P500/ha (fixed, half chance)	60x1x10x500x0.5=	25.0	10x60x0.25x0.45x0.5=	1.7
(6) Winnower	1. Reduction of winnowing work. 1/10 compared with manual. 2. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost.	3 1x140t		10 day, P200/ha (fixed, half chance)	61x1x10x200x0.5=	11.4	10x60x0.25x0.45x0.5=	3.0

Table K.2.14 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (2)

Reg II, Qummo, Middlesex, Colombia	Facilities	Benefits Items	Deficit Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P'000)	Deficit Value/Year Formula	Value(P'000)
(7) Warehouse with Solar Dryer		1. Reduction of drying hours. 1/5 compared with no pavement.	1. Require land.	2						
		2. Improvement of drying quality up to 14% of moisture content.								
		3. Improvement of purity quality up to 95% of purity.								
		4. Improvement of discolored kernel up to 3% of discolored kernel.								
(8) Rice Agro-Industry Center	- Warehouse with Solar Dryer	5. Improvement of immature kernel up to 10% of immature kernel.	1. Require land.	1						
		6. Storing for emergency food shortage.								
		7. Store to sell up to better price up to 20% higher price.								
(9) Rice Mill		1. Reduction of milling hours. 1/500 compared with manual, or Reduction of white rice buying price and transportation hour, buying cost reduction and one time every two months higher selling price of rice higher than usual.	1. Require room 2. Require fuel 3. Required O & M cost.	1						
		2. Food security for emergency.								
		3. Obtaining of by-product.								
		20% of rice husk and 10% of rice bran.								
(10) Quality Control Equipment		1. Improvement of quality up to 14% moisture content.	1. Require room and table.	1						
		2. Improvement of selling weight available to sell on actual weight.								
		3. Controlling of rice crack.								
		1. Reduction of shelling hours. 1/10 compared with manual.								
(11) Corn Sheller (manual type)		2. Reduction of hard work.	1. Require O & M cost.	6						
(12) Corn Agro-Industry Center	- Warehouse with Solar Dryer	1. Reduction of drying hours. 1/5 compared with no pavement.	1. Require land.	1						
		2. Improvement of drying quality up to 14% of moisture content.								
		3. Improvement of purity quality up to 97% of purity.								

Table K.2/14 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (3)

Facilities	Benefits Items	Deficits Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P'000)	Deficit Value/Year Formula	Value(P'000)
	4. Improvement of colored kernel, up to 3% of colored kernel. 5. Food security for emergency. 6. Store to sell up to better price up to 20% higher price.			(included in the above)					
				(included in the above)					
				100% policy	20% x 0.5 x 0.5 (half chance)	1000000 x 200.0 x 0.5 x 0.5 (half chance)	40.0		
				100% corn	20% x 0.5 x 0.5 (half chance)	1000000 x 200.0 x 0.5 x 0.5 (half chance)	30.0		
- Corn Mill	1. Reduction of milling hours, 1500 compared with manual, or 2. Reduction of milled corn buying price and transportation hour, 30% cost reduction and one time per month. 3. Increasing selling price of corn, 30% higher than grain. 4. Food security for emergency. 5. Obtaining of feed for livestock.	1. Require room 2. Require fuel 3. Required O & M cost.	1		30% x 0.5 (half chance)	0.4 x 0.5 x 1500 x 0.5 (half chance)	259.2	180 x 0.25 x 1500 x 0.5 x 0.5 (Operator cost) 2p x 180 x 0.25 x 0.5	46.1 108.0
- Corn Sheller (Engine type)	1. Reduction of shelling hours, 1200 compared with manual. 2. Reduction of hard work. 3. Improvement of quality, up to 14% moisture content. 4. Improvement of selling weight, available to sell on actual weight.	1. Require O & M cost.	1	20/day, 25 day x 25 day	20 day / 1 x 0.5 x 0.5 (half chance)	20 x 0.5 x 0.5 x 0.5 x 0.5	65.0	50 x 0.25 x 1500 x 0.5 x 0.5 (Operator cost) 2p x 50 x 0.25 x 0.5	6.0 30.0
- Quality Control Equipment		1. Require room and table.	1	(included in the above)					
Sub-total:							1,249.4		205.6
Total:							1,543.7		347.4
Benefits Grand Total							1,196.4		

Table K.2.15 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (1)

Facilities	Benefits Items	Deficits Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P000)	Deficits Value/Year Formula	Value(P000)
Rep. VIII. Leyte, Marikina, Marikina									
1. Agricultural Machinery									
(1) Tractor	1. Reduction of farming hours. 1/20 compared with manual. 2. Available to deep cultivation. 3. Reduction of hauling hours. 1/60 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	0						
(2) Hand Tractor	1. Reduction of farming hours. 1/10 compared with manual. 2. Reduction of hauling hours. 1/20 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	1	10ha, 2times, 2crop/ha	100/10ha, P1000/m (hired, half chance)	10x22x1000x0.5=	20.0 10x22x0.5x P10 4500.5= (Operator cost) 100x 120xP300=	4.2	
(3) Sifter	1. Increase of yield. 2. Reduction of farming hours. 1/5 compared with manual.	1. Require O & M cost. 2. Require O & M cost.	5	5/ha	Included in farming system 400xP500 (hired, half chance)	3x1x4500x0.5=	3.0		12.0
(4) Animal Drawn Plow	1. Reduction of farming hours. 1/5 compared with manual.	1. Require O & M cost.	3	3/ha	300xP400 (hired, half chance)	3x1x3400x0.5=	1.8		
(5) Comb-Tooth Harrow	1. Reduction of farming hours. 1/5 compared with manual.	1. Require O & M cost.	3	3/ha	200xP400 (hired, half chance)	3x1x1501/377x2x400x0.5=	9.6		16.2
(6) Animal Drawn Sledge	1. Reduction of hauling hours. 1/10 compared with manual.	1. Require O & M cost.	3	3xha, 1501/377ha	200xP400 (hired, half chance)		34.4		
Sub-total									
2. Post-Harvest & Agro-Industry Facilities									
(1) Multi-Purpose Drier	1. Reduction of drying hours. 1/5 compared with no drier. 2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 1. Reduction of drying hours. 1/10 compared with no movement.	1. Require land. 2x50t paly 2x50t corn (included in the above) (included in the above) (included in the above)	2			2x50,000x0.2x0.5x0.5= (half chance) 2x50,000x0.2x0.5x0.5= (half chance)	80.0 80.0		
(2) Mechanical Drier (for seed)	1. Improvement of drying quality. up to 14% of moisture content. 2. Improvement of purity quality. up to 95% of purity 3. Improvement of discolored kernel. up to 3% of discolored kernel. 4. Improvement of immature kernel. up to 10% of immature kernel. 5. Improvement of mixed kernel. up to 10% of mixed kernel. 6. Available to drying for any kind of seed except of vegetable seeds. 1. Reduction of harvesting hours. 1/15 compared with manual. 2. Reduction of heavy work.	1. Require land & house 2. Require fuel. 3. Require electricity or fuel. 4. Require O & M cost.	1	32ha/5year 85ha/5year 7xha/100mug/ha (including in the above) (including in the above) (including in the above) (including in the above) (including in the above)	4xP600(35kg)/ha 1xP1,300(10kg)/ha	32x5x4500x0.5= (half chance) 85x5x1300x0.5= (half chance)	7.7 1 times x12x0.5xP7.75= 11.2 1 times x12x0.5xP7.75= 1 times x12x0.5xP7.75xP4 = 1 times x12x0.5xP7.75xP4 = (Operator cost) (1times x20x)-(1times x20x) xP500 = (2x3)x000=	0.6 0.8 0.1 0.1 1.5	
(3) Resper	1. Reduction of threshing hours. 1/3 compared with manual. 2. Reduction of hauling hours. 1/10 compared with manual. 3. Reduction of heavy work. 4. Improvement of winnowing work. up to 95% of purity.	1. Require fuel. 2. Require O & M cost.	0						
(4) Rice Thresher (foot type)	1. Reduction of threshing hours. 1/10 compared with manual. 2. Reduction of heavy work. 3. Reduction of winnowing work. up to 95% of purity.	1. Require O & M cost. 2. Require fuel. 3. Require O & M cost.	0						
(5) Rice Thresher (with prime mover)	1. Reduction of threshing hours. 1/10 compared with manual. 2. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost.	1	1xha/80t	10dayxP500/8t	80x10x500x0.5= (half chance)	25.0 10x50.25x10xP50.5= (Operator cost) 100x xP500=	1.7 3.0	
(6) Winnower	1. Reduction of winnowing work. 1/10 compared with manual. 2. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost.	0						

Table K.2.15 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (2)

Reg. VII: Leyte, Isabela, Marikina	Facilities	Benefits Items	Defects Item	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value (P000)	Defects Value/Year Formula	Value (P000)
	(7) Warehouse with Solar Dryer	1. Reduction of drying hours. 1/2 compared with no pavement. 2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity. 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 6. Storing for emergency food storage. up to 20% higher price. 7. Store to sell up to better price. up to 20% higher price.	1. Require land.	1	50t paddy 50t corn (included in the above) (included in the above) (included in the above)	20% x 0.5 x P8 (half increase) 20% x 0.5 x P8 (half increase)	50,000 x 0.2 x 0.5 x 0.5 = (half chance) 50,000 x 0.2 x 0.5 x 0.5 = (half chance)	20.0 15.0		
	(8) Rice Agro-Industry Center - Warehouse with Solar Dryer	1. Reduction of drying hours. 1/2 compared with no pavement. 2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity. 4. Improvement of discolored kernel. up to 3% of discolored kernel. 5. Improvement of immature kernel. up to 10% of immature kernel. 6. Storing for emergency food storage. up to 20% higher price. 7. Store to sell up to better price. up to 20% higher price.	1. Require land.	0	100t paddy 100t corn (included in the above)	20% x 0.5 x P8 (half increase) 20% x 0.5 x P8 (half increase)	100,000 x 0.2 x 0.5 x 0.5 = (half chance) 100,000 x 0.2 x 0.5 x 0.5 = (half chance)	40.0 30.0		
	(9) Rice Mill	1. Reduction of milling hours. 1/2 compared with manual, or price and transportation hour. buying cost reduction and one time every two months. 2. Increasing selling price of rice. higher than paddy. 3. Food security for emergency. 4. Obtaining of by-product. 20% of rice husk and 10% of rice bran. 5. Improvement of quality. up to 14% moisture content. 6. Improvement of selling weight. available to sell on actual weight. 7. Combining of rice crack. 8. Reduction of shelling hours. 1/2 compared with manual. 9. Reduction of field work.	1. Require room 2. Require fuel. 3. Required O & M cost.	0						
	(10) Corn Sheller (manual type)	1. Reduction of shelling hours. 1/2 compared with manual. 2. Reduction of field work.	1. Require room and table	0						
	(11) Corn Agro-Industry Center - Warehouse with Solar Dryer	1. Reduction of drying hours. 1/2 compared with no pavement. 2. Improvement of drying quality. up to 14% of moisture content. 3. Improvement of purity quality. up to 95% of purity.	1. Require O & M cost.	2	200t (included in the above)	20% x 0.5 x P8 (half increase)	200 x 0.2 x 0.5 x 0.5 =	2.0		

Table K.2-16 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (3)

Rep. Vill. Name, Moredoo, Moredoo	Facilities	Benefits Items	Deficit Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P000)	Deficit Value/Year Formula	Value(P000)
		4. Improvement of colored kernel up to 3% of colored kernel. 5. Food security for emergency. 6. Store to sell up to better price up to 20% higher price.								
- Corn Mill		1. Reduction of milling hours, 1/500 compared with manual, or 2. Reduction of milled corn buying price and transportation hour, 30% cost reduction and one time per month. 3. Increasing selling price of corn 30% higher than given. 4. Food security for emergency. 5. Outlasting of feed for livestock.	1. Require room 2. Require fuel 3. Required O & M cost.	0						
- Corn Sheller (Engine type)		1. Reduction of shelling hours, 1/20 compared with manual. 2. Reduction of hard work. 1. Improvement of quality up to 14% moisture content. 2. Improvement of selling weight available to sell on actual weight.	1. Require O & M cost.	0						
- Quality Control Equipment			1. Require room and table	0						
Sub-total:								291.5		7.6
Total:								325.8		24.0
Benefits Grand Total:								301.9		

Table K.2.16 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (1)

Facilities	Benefits Items	Deficits Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value (P'000)	Deficit Value/Year Formula	Value (P'000)
1. Agricultural Machinery									
(1) Tractor	1. Reduction of farming hours, 1/20 compared with manual. 2. Available to deep cultivation. 3. Reduction of hauling hours, 1/60 compared with manual. 1. Reduction of farming hours, 1/10 compared with manual. 2. Reduction of hauling hours, 1/20 compared with manual. 1. Increasing of yield. 1. Reduction of farming hours, 1/2 compared with manual. 1. Reduction of farming hours, 1/5 compared with manual. 1. Reduction of hauling hours, 1/10 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	0						
(2) Hand Tractor	1. Reduction of farming hours, 1/10 compared with manual. 2. Reduction of hauling hours, 1/20 compared with manual.	1. Require fuel cost. 2. Require O & M cost.	1	10ha, 2times, 2crops	1000/ha (hired, half chance)	10x2x2x1000x0.5=	20.0	10x2x2x5x0.25x10 xP10.45x0.5=	4.2
(3) Sprayer	1. Reduction of farming hours, 1/20 compared with manual.	1. Require fuel cost.	3	3x3ha	(included in farming system)			100x12x2x5xP300=	12.0
(4) Animal Drawn Plow	1. Reduction of farming hours, 1/2 compared with manual.	1. Require O & M cost.	3	3x1ha	40dayxP500 (hired, half chance)	3x1x40x500x0.5=	3.0		
(5) Comb-Tooth Harrow	1. Reduction of farming hours, 1/5 compared with manual.	1. Require O & M cost.	3	3x1ha	30dayxP400 (hired, half chance)	3x1x30x400x0.5=	1.8		
(6) Animal Drawn Sledge	1. Reduction of hauling hours, 1/10 compared with manual.	1. Require O & M cost.	3	3x1ha1501/377ha	20dayxP400 (hired, half chance)	3x1x1501/377x2x400x0.5=	9.6		
Sub-total:							34.4		16.2
2. Post-Harvest & Agro-Industry Facilities									
(1) Multi-Purpose Dryer	1. Reduction of drying hours, 1/5 compared with no pavement. 2. Improvement of drying quality, up to 14% of moisture content. 3. Improvement of purity quality, up to 95% of purity. 4. Improvement of discolored kernel, up to 3% of discolored kernel. 5. Improvement of immature kernel, up to 10% of immature kernel. 1. Reduction of drying hours, 1/10 compared with no pavement.	1. Require land. 2. Require fuel. 3. Require electricity or fuel. 4. Require O & M cost.	1	50t paddy 50t corn (included in the above) (included in the above) (included in the above)	20x40.5x20 (half increase) 20x40.5x20 (half increase)	50.000x0.2x0.5x0.5= (half chance) 50.000x0.2x0.5x0.5= (half chance)	40.0 30.0		
(2) Mechanical Dryer (for seed)	1. Improvement of drying quality, up to 14% of moisture content. 2. Improvement of purity quality, up to 95% of purity. 3. Improvement of discolored kernel, up to 3% of discolored kernel. 4. Improvement of immature kernel, up to 10% of immature kernel. 5. Improvement of mixed kernel, up to 10% of mixed kernel. 6. Improvement of any land of seed except of vegetable seeds. 1. Reduction of harvesting hours, 1/15 compared with manual. 2. Reduction of heavy work.	1. Require land & house. 2. Require fuel. 3. Require electricity or fuel. 4. Require O & M cost.	1	41ha/5year 90ha/5year 27ha/5year (including in the above) (including in the above) (including in the above) (including in the above) (including in the above)	40x500x35x0.5/ha 1x5x1,300x8x0.5/ha (half chance)	41x5x500x0.5x0.5= (half chance) 90x5x1x1300x0.5= (half chance)	9.8 11.7	1 time x12x2x3x5x7.75=	0.6
(3) Reaper	1. Reduction of harvesting hours, 1/15 compared with manual. 2. Reduction of heavy work.	1. Require fuel. 2. Require O & M cost.	1	20ha	20dayx2xP85 (hired, half chance)	20x20x2x5x0.5=	26.0	1 time x12x2x3x5x7.75=	0.6
(4) Rice Thresher (foot type)	1. Reduction of threshing hours, 1/2 compared with manual.	1. Require O & M cost.	0						
(5) Rice Thresher (with prime mover)	1. Reduction of threshing hours, 1/10 compared with manual. 2. Reduction of heavy work. 3. Reduction of winnowing work. 4. Improvement of purity quality, up to 95% of purity. 1. Reduction of winnowing work, 1/10 compared with manual. 2. Improvement of purity quality, up to 95% of purity.	1. Require fuel. 2. Require O & M cost.	1	1x50t	10dayxP500/8t	80x10x500x0.5x0.5= (half chance)	25.0	10x5x0.25x10x5x0.5x0.5= (half chance) 100x5xP200=	1.7 3.0
(6) Winnower	1. Reduction of winnowing work, 1/10 compared with manual. 2. Improvement of purity quality, up to 95% of purity.	1. Require O & M cost.	0						

Reg. X. Buchanan, Malaysia, Singapore.

K-46

Table K2-18 Estimated Benefits from Distribution of Post-Harvest & Agro-Industry Facilities (3)

Facilities	Benefits Items	Defects Items	Number of Facility	Improved & Increased Value	Unit Value	Benefit Value/Year Formula	Value(P'000)	Defects Value/Year Formula	Value(P'000)
	4. Improvement of colored kernel, up to 3% of colored kernel. 5. Food security for emergency. 6. Store to sell up to better price, up to 20% higher price.			(included in the above) 100t pelay 100t corn	20% x 0.5xP8 (half increase) 20% x 0.5xP6 (half increase)	10000x0.2x0.5x0.5x (half chance) 10000x0.2x0.5x0.5x (half chance)	40.0 30.0		
• Corn Mill	1. Reduction of milling hours, 1/500 compared with manual, or 2. Reduction of milled corn buying price and transportation hour, 30% cost reduction and one time per month. 3. Increasing selling price of corn, 30% higher than grain. 4. Food security for emergency. 5. Obsolescence of feed for livestock. 1. Reduction of shelling hours, 1/50 compared with manual. 2. Reduction of hard work.	1. Require room 2. Require fuel 3. Required O & M cost.	1	(0.4x8x180xst) 1 20/day, 250x+250x 1 (included in the above)	30% x P8 (half increase) 25xP8 x 0.5 (half chance)	0.4x8x180x1.000x0.3x0.5x0.5x (half chance) 20x0.5x0.5x0.5x (half chance)	259.2 65.0 30.0	180x0.25x15xP8.53x (Operator cost) 2x x180xP300x (Operator cost) 2x x50xP300x	46.1 108.0 6.0 30.0
• Corn Shelter (Engine type)	1. Improvement of quality, up to 14% moisture content. 2. Improvement of selling weight, measurable to sell on actual weight.	1. Require room and table.	1						
• Quality Control Equipment									
Subtotal							876.7		205.9
Total							711.1		222.1
Benefits Grand Total							489.0		

Table K.2-17 Ownership and Person in Charge for Implimented Equipment and Facilities

	Ownership	Management Planning	Opration & Maintenance
Land	Municipal or (Barangay)		(Municipal) or Barangay
Facilities	Provincial	Municipal	Cooperative (FO) (Beneficiaries)
Equipment with prime mover	Provincial	Municipal	Municipal (Cooperative) (FO) (Beneficiaries)
Equipment manual type	Provincial	Municipal	Cooperative (FO) (Beneficiaries)

Remarks: () = second recommendation personnel

Table K.2-18 DTI-CARP Inventory of CSF/AIP Projects (1)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
REG. CAR, Abra					
A. Operational Projects					
1. Transport Project (89 C.O.)	260,000	Abra Guimpong Association Baay-Licuan, Cacub and Malibcong, Abra	1,500	0	Project operation/mgt normal; with P106,617 repayment as of Mar '96.
2. Decortication Machine (91 I.O.)	28,261	Villaviciosa Integrated Women's Association Villaviciosa, Abra	122	0	Accounted operationalized 2nd quarter 1995.
3. Rattan Furniture Mfg. (91 I.O.)	9,975	Napaparan Rattan Furniture Makers Association Danglas, Abra	23	0	Amortization started in July of 1993; with P700 IRS payment.
4. Transport Project (89 C.O.)	260,000	Karao Ekip Farmers Assn. Karao and Ekip, Bokod, Benguet	201	0	The facility is fully paid with one ownership already awarded to proponent.
Sub-total (A):	558,236		1,846	0	
REG. I, La Union					
A. Operational Projects					
1. Palay Processing Facility (89 C.O.)	90,000	Inabaan Norte Agri MPC Inc. Baay-Licuan, Lacub and Malibcong, Abra, La Union	200	0	Fully operational, with P47,216 IRS payment.
B. Inoperative Projects					
1. Ceramics Manufacturing Facility (89 C.O.)	34,600	Barrientos Ceramics Assn. Barrientos, Luna, La Union	15	0	Waived to DTI; CSF at the DTI La Union; scouting for qualified beneficiary for possible transfer or sale.
2. Ceramics Manufacturing and Training Facility (89 C.O.)	93,600	Damoris National High School Damoris, Sto. Tomas	50	0	Waived to DTI; scouting for qualified beneficiary for possible transfer or sale.
3. Palay Processing Facility (89 C.O.)	90,000	Tubao Valley SWT Procoma, Inc. Leonest West, Tubao, La Union	140	0	Non-operational; waived to DTI and scheduled for COA valuation; with P5,000 repayment, identification or replacement proponent ongoing.
4. Lipay Loomweaving Livelihood Project (91 I.O.)	38,000	Lipay Este Consumers' Coop. Incorporated San Gabriel, La Union	20	0	CSF waived to DTI. DAR is helping DTI in identifying ARC or NGO for possible transfer or sale.
Sub-total (B):	256,200		225	0	
REG. II, Quirino					
A. Operational Projects					
1. Rattan Splitting and Coring Machine (91 C.O.)	310,500	Bugkilot Confederation of Rattan Gatherers Assn. Nagtipunan, Quirino	18	0	Operational; P15,000 IRS payment.
2. Handmade Paper Facility (91 C.O.)	140,510	Dibul Farmers MPCl (DIFARMCO) Saguday, Quirino	37	0	The DIFARMCO Handmade Paper Industry became the Regional Center for Paper Making.
3. Banana Chipping Machine (89 C.O.)	12,960	Maddela Food Processors Assn. Incorporated, Maddela, Quirino	36	0	Operating inefficiently; no regular buyer of banana chips.
4. Rice and Corn Grinder (89 C.O.)	12,320	Our Lady of Lourdes Credit Cooperative, Incorporated Aglipay, Quirino	100	0	Operational w/ P12,230 loan fully paid.
Sub-total (A):	476,290		191	0	
B. Inoperative Projects					
1. Rattan Splitting and Coring Machine (89 C.O.)	302,829	Rattan Weaver's Association of Maddela Buenavista, Maddela, Quirino	31	0	Non-operational; proponent signified her intent to return the equipment, with P120,668 repayment to date.

Table K 2-18 DTI-CARP Inventory of CSF/AJP Projects (2)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
REG. III, Bataan					
A. Operational Projects					
1. Palay Reaper (93 I.O.)	76,000	Mt. View MPCl Maligaya, Dinaluphan Bataan	no data		Operationalized within 2nd quarter of 1995; in good condition; P12500 IRS payment; good management
B. Inoperative Projects					
1. Garments Training and Production Center (91 I.O.)	274,000	Dinaluphan Economic Dev't Foundation, Incorporated Dinaluphan, Bataan	150		0 Two(2) units of hi-speed sewing machines were pulled out by DTI Bataan; for transfer to another group to be identified.
REG. IV, Quezon					
A. Operational Projects					
1. CFS on Handmade Paper (91 I.O.)	213,632	Lopez PEC Multi-Purpose Coop. Lopez	28		0 Machineries & equipment are undergoing rehabilitation.
B. Inoperative Projects					
1. Brick/Roof tile Mfg. Facility (89 I.O.)	210,770	Samahang Magsasaka ng Calutan Calutan, Agdangan, Quezon	54		0 Facility is being prepared for transfer to another proponent.
REG. V, Camarines Sur					
A. Operational Projects					
1. Bamboo craft Making (89 C.O.)	11,180	Pinit Bamboo craft Makers Assn. Bgy. Salvacion, Ocampo, Camarines Sur	32		0 The new proponent, Gipi MPCl of barangay Salvacion merged with the Pinit Bamboo craft Makers Ass.; with P6,471 IRS payment.
2. Post-Harvest Facility (Corn Sheller) (89 C.O.)	23,000	Quilomaon Multi-Purpose Coop. Sangay, Camarines Sur	37		0 Proponent identified to assume fine-twine billing eqpt. from Catanduanes; w/ P3,000 IRS payment.
3. Trade and Display Center (89 C.O.)	300,000	Federation of Manufacturers Assn. of Camarines Sur Inc. Naga City, Camarines Sur	200		0 Coordination w/ provincial gov't planned to determine its plan for the CFS and proponent.
Sub-total (A):	334,180		269		0
B. Inoperative Projects					
1. Sack Making (89 C.O.)	62,835	Highlands Multi-Purpose Agriculture Cooperative Sigamot, Libmanan Camarines Sur	35		0 P20,385 IRS payment ??? For delisting.
2. Soap Production (89 C.O.)	47,973	Milagrosa Mfg. Cooperative Pamukid, Dan Fernando Camarines Sur	42		0 Resident COA advised DTI to request DOST technical team's appraisal of the CFS; for delisting.
3. Handloom Weaving (89 C.O.)	62,875	St. Joseph Handloom Weavers Multi-Purpose Cooperative Palsong, Bula, Cam. Sur	25		0 Four(4) additional units of handlooms were donated by CITC; with P25,150 IRS payment; the coop. to convene for reorganization planning.
4. Balut Making (89 C.O.)	81,979	Milaor Manpower Resources Development Corporation Milaor, Camarines Sur	25		0 Audit team's report is still for submittal, for delisting.
Sub-total (B):	255,662		127		0

Table K.2-18 DTI-CARP Inventory of CSF/AIP Projects (3)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
REG. VI. Aklan					
A. Operational Projects					
1. Kiln (for pottery and bricks) CFS ('89 C.O.)	173,650	Pot Makers Assn. of Lezo Poblacion, Lezo, Aklan	26	0	Kiln fireboxes for repair; w/ P10,500 IRS payment
2. CFS Handlooms ('91, I.O.)	80,000	Makato MPCl Poblacion Makato, Aklan	86	0	Strengthening of the coop. is needed; 19 months in arrears; P12,300 payment on IRS.
Sub-total (A):	253,650		112	0	
B. Inoperative Projects					
1. Ibajay's Rice Mill & Warehouse ('89 C.O.)	188,912	Ibajay Farmers' MOCI Ibajay, Aklan	202	1	Not Operating due to lack of working capital; some P30,827 IRS payment
REG. VII. Bohol					
A. Operational Projects					
1. Loomweaving 100 units of handlooms ('89 C.O.)	150,000	Inabanga Federated Loomweavers Assn. Daet, Inabanga, Bohol	55	0	Project in full operation.
2. Banana Processing Delivery Vehicle ('89 C.O.)	135,000	Sevilla Foodcrafts Producers Cooperative Incorporated Sevilla, Bohol	42	0	1 unit AUV turned over 6 July 1990; in full operation with rehab of the CSF completed; rehabilitated at P35,715 cost P170,715; the start of payment scheduled 3/96.
3. Antequera Production and Trade Center ('89 C.O.)	285,282	Antequera Producers Coop. Incorporated Antequera, Bohol	105	0	Project in full operation.
4. Matweaving ('89 C.O.)	101,908	Ubay Matweavers Association Ubay, Bohol	30	0	Producing bread and butter mat designs; full operation.
5. Basketweaving ('91 I.O.)	115,970	Mabini Basketweavers Mabini, Bohol	28	0	Project in full operation; P47,555 IRS payment
6. Basketweaving ('91 I.O.)	109,265	S. Bulfones Weavers Assn. Poblacion S. Bulfones, Bohol	35	0	Project in full operation; prodn. level dependent on orders placed.
7. Loomweaving ('91 I.O.)	140,000	Tubigon Loomweavers Assn. Pinayagan Norte, Bohol	42	0	1st qtr. '92 (Jan. 8); Prodn in full operation; P40,000 cost of rehab for inclusion into IRS; P2,000 payment
8. Hatweaving ('91 I.O.)	1,000	Cansunqay Hatweavers Assn. Bohol	25	0	Project in full operation.
9. Meat Processing ('93 I.O.)	25,912	Soom Meat Processors Soom Trinidad, Bohol	40	0	Operationalized w/in the 2nd quarter 1995; full operation; supplying processed meat product in Trinidad.
10. Basketweaving ('89 C.O.)	104,503	Balilihan MPCl Balilihan, Bohol	50	0	In full operation; w/ sub-con orders from Antequera Producers Cooperative.
11. Woodworking ('93 I.O.)	15,305	Sagbayan Farmers Woodworkers Association San Isidro, Sagbayan, Bohol	15	0	Operationalized w/in the 2nd qtr. '95; in full operation supplying fashion accessories components in Cebu.
Sub-total (A):	1,184,145		467	0	
B. Inoperative Projects					
1. Dried Fruit Processing ('89 C.O.)	99,200	Trinidad Fruit & Vegetables Growers Association Trinidad, Bohol	34	0	Non-operational; for writing off; w/ P19,677 IRS payment
2. Kroepeck Making ('89 C.O.)	131,198	Candijay Kroepeck Makers Association Pob. Candijay, Bohol	27	0	Non-operational; product not perfected; market linkage activity needed; for rehab; P21,466 IRS payment

Table K.2-18 DTI-CARP Inventory of CSF/AIP Projects (4)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
3. Loomweaving (91 I.O.)	16,000	Magtandang Loomweavers Assn. Danao, Bohol	41	0	Non-operational; production dependent on orders placed.
4. Loomweaving (91 I.O.)	93,456	Valencia Loomweavers Assn. Amas, Valencia, Bohol	72	0	Still non-operational; w/ P33,475 IRS payment.
Sub-total (B):	339,854		174	0	
REG. VIII. Leyte					
A. Operational Projects					
1. Ticog Loom Weaving (89 C.O.)	2,300	Bahay Farmers MPCl Barangay Bahay, San Miguel Leyte	20	0	Scheduled to pay their 4th amortization; P800 IRS payment
B. Inoperative Projects					
1. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,800	Liwayway Charcoal Makers Assn. Barangay Liwayway, MacArthur Leyte	0	0	For condemnation
2. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	2,000	Imelda Matam-is Charcoal Makers Association Barangay Imelda, Baybay, Leyte	0	0	For condemnation
3. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,700	Albuera Charcoal Producers Association Srio Mangga, Albuera, Leyte	0	0	For condemnation
4. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	2,495	Hilongos Integrated Barangay Consumers Association Bgy. Lamak, Hilongos, Leyte	0	0	For condemnation
5. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	2,000	Kapunungan Ng Mga May- Uling Ng Ubang Industriya Brgy. Culasi, Leyte, Leyte	0	0	For condemnation
6. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,800	KAMASIKA MPCl Bgy. Daro, Jaro, Leyte	0	0	For condemnation
7. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,800	Macupa Coconut Based Farmers Multi-purpose Cooperative Macupa, Jaro, Leyte	0	0	For condemnation
8. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,700	Campokpok Charcoal Makers Association Bgy. Campokpok, Tabango, Leyte	0	0	For condemnation
9. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,900	Tinago Charcoal Makers Assn. Brgy. Tinao, San Isidro Leyte	0	0	For condemnation
10. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,800	Pawa Coco-farmers Association Bgy. Pawa, La Paz, Leyte	0	0	For condemnation
11. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,900	Canvertudes Small Coconut Producers Association Bgy. Canvertudes, Atang-Atang, Leyte	0	0	For condemnation; w/ P158 IRS payment
12. Coco-Charcoal Making Center (89 C.O.)	1,700	Malazarte MPCl Barangay Malazarte, Matag-ob, Leyte	0	0	For condemnation
13. Coco-Charcoal Making (Pag-asa Kilns) (89 C.O.)	1,900	Vilaba Charcoal Makers Assn. Bgy. Balite, Vilaba, Leyte	0	0	For condemnation
14. Ceramics Production Center (89 C.O.)	58,492	Matalom Ceramics Devt. Assn. Brgy. Zaragosa, Matalom, Leyte	35	0	To be reassessed by COA for the new proponent.
15. Egg Processing (Balut) (89 C.O.)	3,360	San Agustin MPCl Bgy. Tugbong, Kananga, Leyte	27	0	For condemnation
16. Coco-Vinegar Production Center (89 C.O.)	3,027	San Agustin Coco-Vinegar Makers Association San Agustin, Babatngon, Leyte	21	0	Non-operational but the proponent to pay their 3rd amortization; with P500 IRS payment
17. Egg Processing (Balut) (89 C.O.)	4,000	Matica-a Balut and Salted Egg Makers Association Matica-a, Ormoc City, Leyte	30	0	For retrieval/pull-out
Sub-total (B):	93,374		113	0	

Table K 2-18 DTI-CARP Inventory of CSF/AIP Projects (5)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
REG. X. Bukidnon					
A. Operational Projects					
1. Rattan & Bamboo Production Project (911.O.)	450,000	Talakag Rattan Furniture/ Handicraft Makers Assn. Talakag, Bukidnon	15	0	Additional equipment are already installed.
2. Rattancraft Processing Project (89 C.O.)	225,000	Tigwa Rattancraft Operators and Workers Association Halapitan, San Fernando Bukidnon	15	0	Accounted operationalized 2nd quarter '95; CFS went unreported for more than a year; 10-15 households are benefiting from the facility.
Sub-total (A):	675,000		30	0	
B. Inoperative Projects					
1. Ramie Processing Center Vice Village Level Ramie Processing (89 C.O.)	290,000	Bukidnon Ramie Growers Assn. Valencia, Bukidnon	590	0	Operation suspended; negotiations on-going to pay-off loans by selling the technology or arrange a package to convert loan component into grant.
2. Rattan Processing Center (89 C.O.)	395,000	Provincial Production Center Valencia, Bukidnon	25	0	Transferred from Bayugan, Agusan del Sur, the CFS is planned to be used as training cum production center (per travel report made last 4th qtr. 1994; no recent update).
Sub-total (B):	685,000		615	0	
REG. XI. Davao					
A. Operational Projects					
1. Cold Storage & Food Processing Equipment (911.O.)	18,130	Kooperatiba ng mga Mansasaka ng Kalinan Maglanos, Calinan, Davao City	110	73	Fully paid as of 16 May 1994; marketing tie-up w/ SAMPCO is seen to max. utilization of the cold storage facility.
2. Cold Storage & Platform Scale (911.O.)	18,200	Sunshine ARBA MPCl (formerly Sirawan-Toni ABRA MPCl) Sirawan, Toni, Davao City	47	0	Reported fully paid as of 30 August 1994; assisted by Magnolia Chicken in marketing activities; the P75,000 MEDP-CDF loan to be released January 1996.
Sub-total (A):	36,330		157	73	
C. Project Established					
1. Rattancraft Tools and Equipment (911.O.)	8,679	DTI Davao City Davao City	0	0	Retrieved from Titugap United Farmers MPCl; no replacement proponent identified as of to date.
REG. XIII. Surigao del Norte					
A. Operational Projects					
1. Rootcrops Processing (911.O.)	51,000	Glenn New Mabuhay MPCl Glenn New Mabuhay, Dinagat Surigao del Norte	365	0	P10,550 IRS payment made; 9-10 hectares planted to cassava.
2. Rootcrops Processig (911.O.)	51,000	Anao-aon Ipi MPCl, Inc. San Francisco, Surigao del Norte	220	0	P7,250 IRS payment made; AIFAMUCO with 8 hectares planted to cassava.
Sub-total (A):	102,000		585	0	

Table K.2-18 DTI-CARP Inventory of CSF/AJP Projects (6)

as of March, 1996

Project Status/ Title	DTI-CARP Cost	Proponent/Location	Beneficiaries FB's	LOs	Remarks
B. Inoperative Projects					
1. Ceramic Processing Center (89 C.O.)	75,000	Garcia Ceramic Producers Assn. Garcia, Santa Monica Surigao del Norte	30	5	Kiln ceased to operate due to technical design defects; kiln redesigned with the first firing successful.
2. Rootcrops Processing (911.o.)	51,000	Mainit Rootcrops Producers' Association, Incorporated Magpayang, Mainit, Surigao del Norte	115	0	P12,750 IRS payment made; group not able to meet IRS commitments.
Sub-total (B):	126,000		145	5	

Source: Department of Trade and Industry

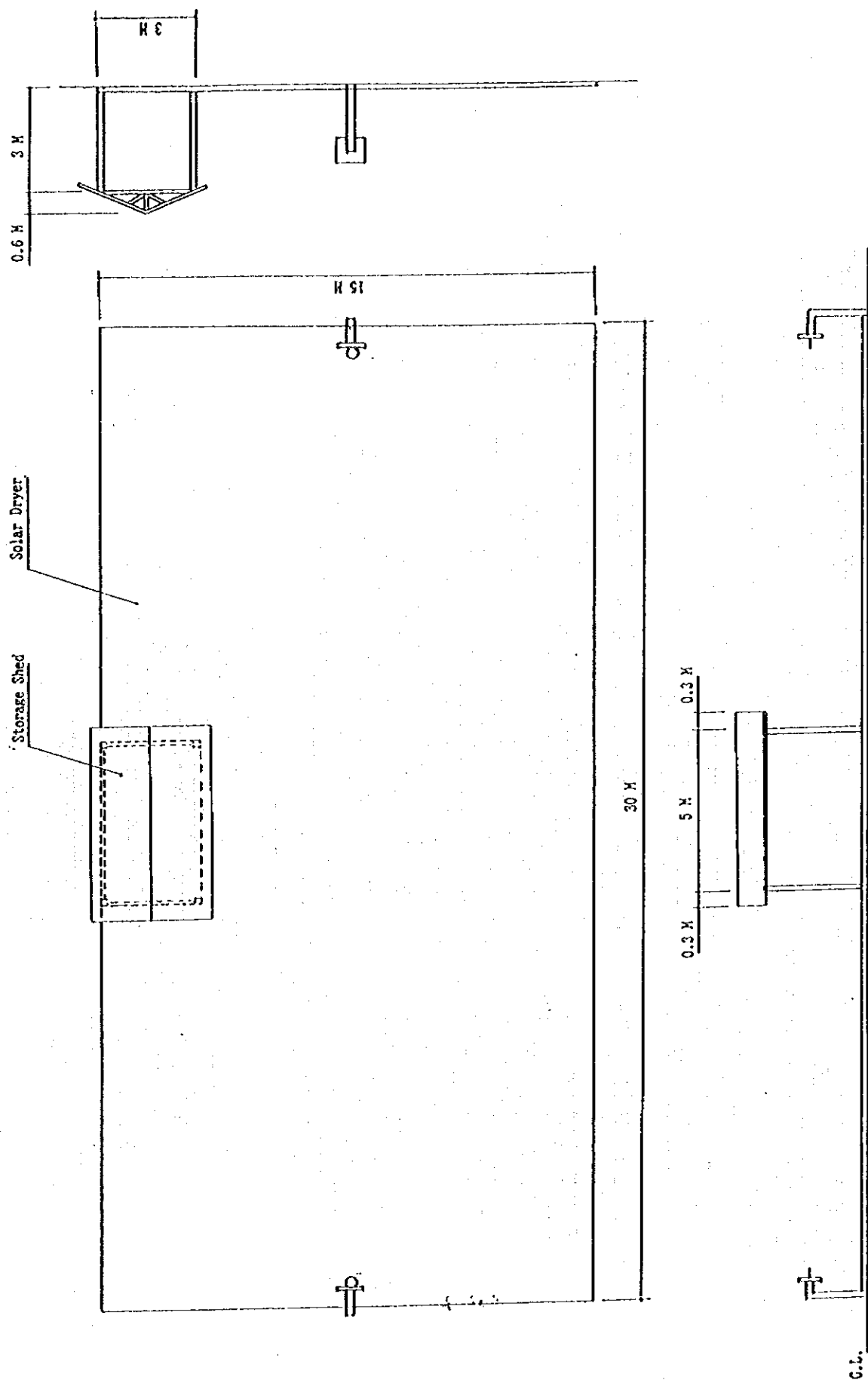


FIGURE K.2-1 PROPOSED PLAN OF MULTI-PURPOSE DRYER

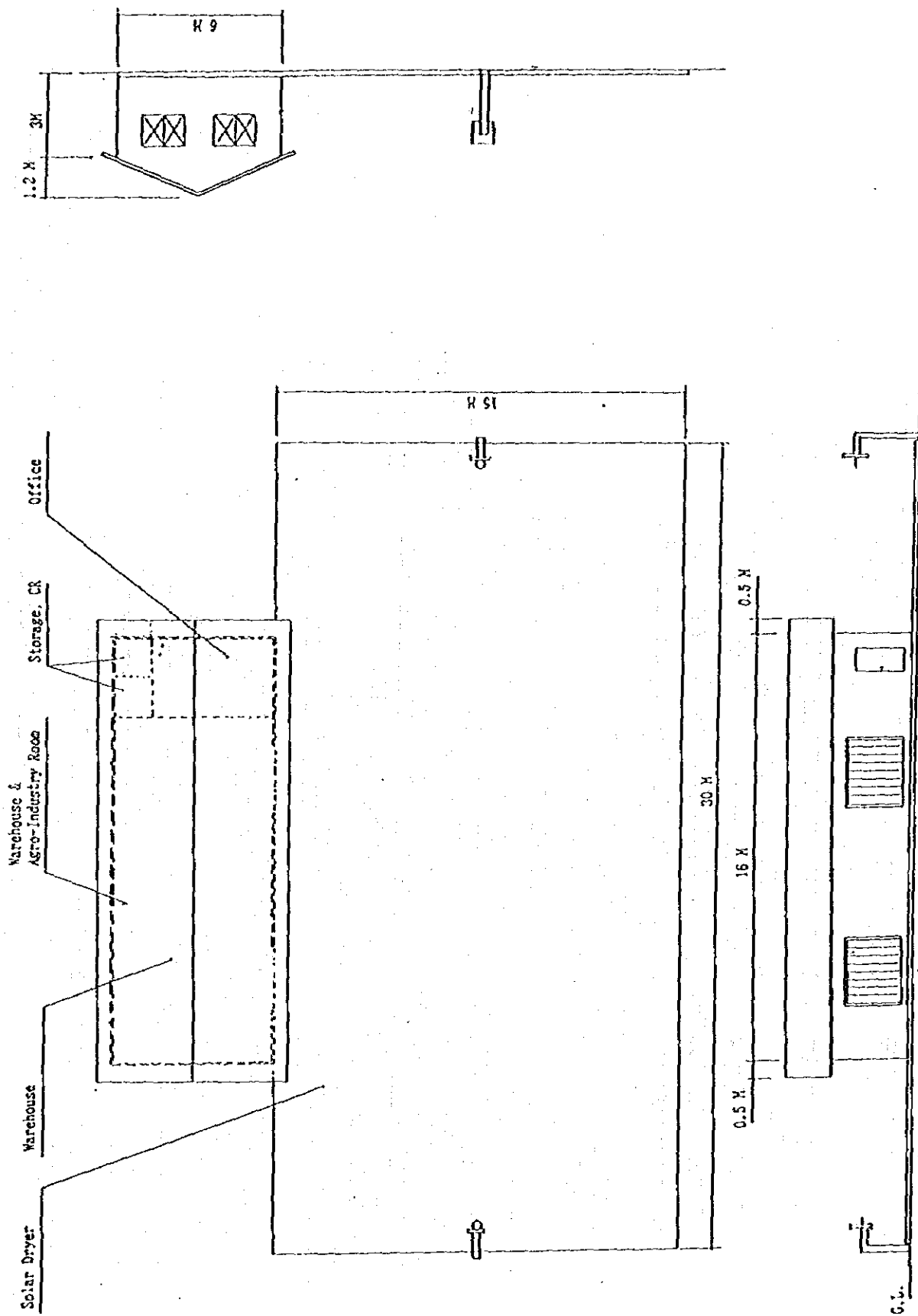


FIGURE K.2-2 PROPOSED PLAN OF RICE OR CORN AGRO-INDUSTRY CENTER

FIGURE K.2-3 FLOW CHART FOR GUIDELINE OF POST-HARVEST DEVELOPMENT PLAN

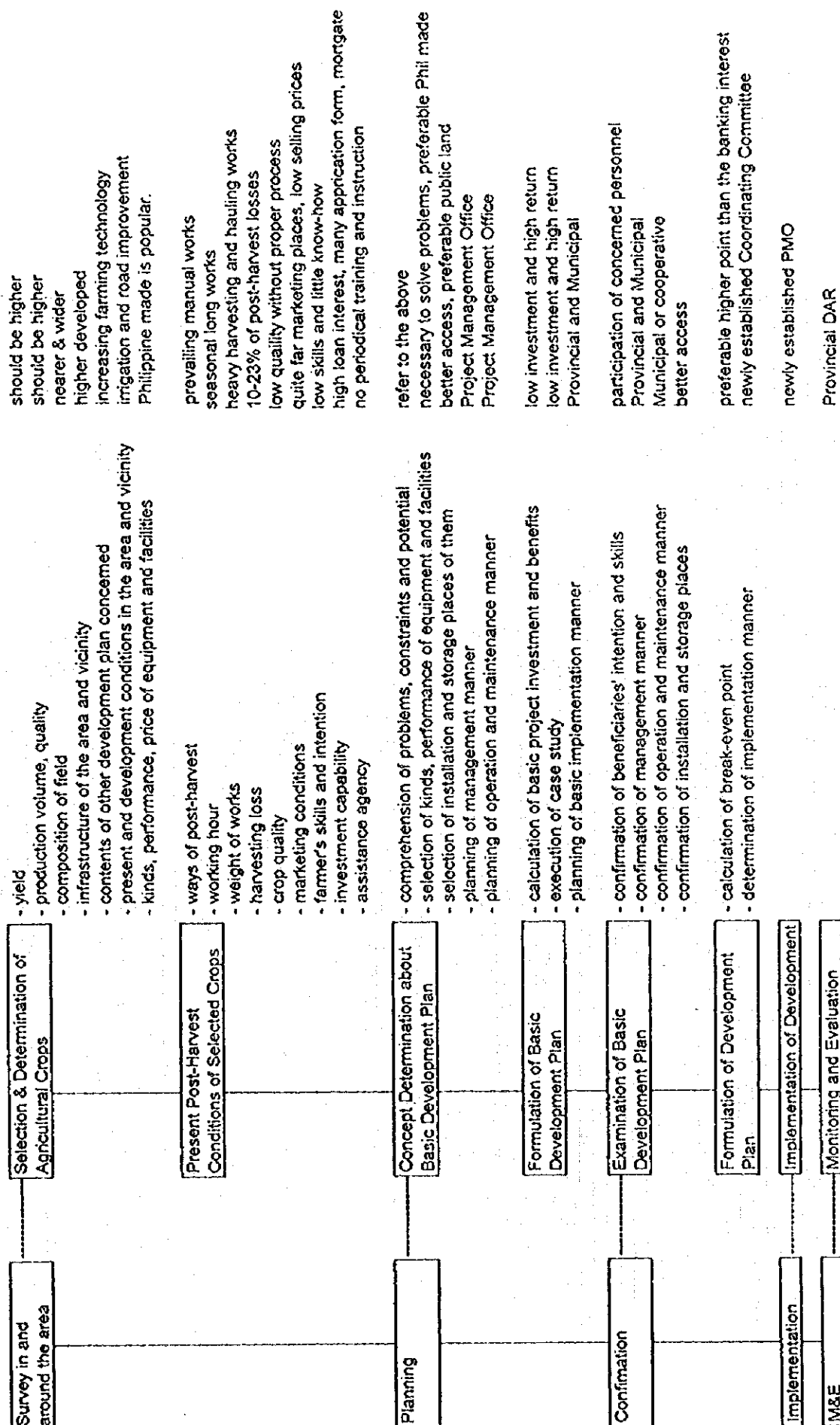


FIGURE K-2-4 FLOW CHART FOR GUIDELINE OF AGRO-INDUSTRY DEVELOPMENT PLAN

