

Attachments

Attachment-1	A Sample Agreement for Establishment of WUA (A part of the case of "Lubhu Irrigation Scheme" in Lalitpur district) ..	111
Attachment-2	A Sample of (Sub-)Project Request (In case of "Thika Bhairaw-I" in Lalitpur district)	117
Attachment-3	A Sample of (Sub-)Project Profile (In case of "Shali Nadi" in Kathmandu district)	123
Attachment-4	A Sample of Identification Survey Result (In case of "Mahadev Khola" in Bhaktapur District)	141



श्री ५ की सरकार
जलश्रोत मन्त्रालय
सिंचाई विभाग
मध्यमाञ्चल क्षेत्रीय सिंचाई निर्देशनालय
जिल्ला सिंचाई कार्यालय, ललितपुर

Lubhu Rajkulo

फाइल संख्या १

नाम ... लुभु राजकुलो सिंचाई योजना

विषय

सम्बन्धित

... .. देखि सम्म

२०४ साल

लुभू (सिंचाई) राज कुली सिंचाई योजना

घाट

सिंचाई हुन गा. वि. स. कक

सि. नं	गा. वि. स. का नाम	घाट नं. क्र.	घरमुलीसंख्या	परिवार संख्या	जम्मा क्षेत्रफल
१	टिकाथली गा. वि. स.	६, ७, ८, ९.	२२५	१६०३	१०३४-०-०
२	लुभू गा. वि. स.	१, २, ३, ४, ६, ७, ८	२५५	१६४६	१०८३-१-३
१००	जामादार गा. वि. स.	८	२२	१५८	१४५-०-०
			४०२	३७०८	२२६२-१-३

४. महँ राक्षको आयोजनाको भने हाल मर्मत समार कटले भरको छ ।

- सिंचाई विभाग ✓

- विज्ञानदल

५. आयोजनाको किसिम:-

- सतसमत ✓

- लिफ्ट

- भूमिगत

६. यसद सतसमत वा लिफ्ट आयोजना हो भने मुहानको विवरण:-

(क) नदी । सीलाको नाम : शुद्धपोखरा (शुद्धपोखरा)

(ख) मुहान रहेको स्थान : सिसौटी, लामाचौर

- गाउँ विकास समिति : लामाचौर १०.११.६०

- बाढा नं : १

- ठाउँको नाम : सिसौटी

(ग) स्थायी । अस्थायी

(घ) क्षेत्र । वैशाख महिनामा मुहानमा रहेको पानी को परिमाण ०.०५१ + युमेक

७. मुहानको समस्या:-

उल्लेखित मुहान मन्दा तल माथि २।२ कि. मि. भित्र त्यस सीलाबाट कुनै कुलोहरू पहिले देा रना हिरा भएको भए ताँ कुलोहरूको मुहान र सिंचित क्षेत्र सम्बन्धी विस्तृत विवरण दिने ✓

८. उक्त मुहानबाट नयाँ कुलो निर्माण गर्दा दफा -७ मा उल्लेखित किंदा नहरूबाट बाधा आउं कि आउदैन उल्लेख गर्ने । ✓

९. पुरानो कुलो भए सँगै कुलो निर्माणको लागि श्री ५ को सरकार वा अन्य कुनै निकायहरू बैंक सँग संस्था आदिबाट श्रण लिनको छ कि छैन, छ भने कौहले लिएको श्रण चुका भैसकेको छ उल्लेख गर्ने (ऋण रकम र साल समेत खुलाउने) ✓

१०. आयोजना-अन्तर्गत-सिंचाई-हुन-सक्ने-क्षेत्रफल-हेक्टरमा-:

- (क) हाल मई रासैकाँ ११५ हेक्टर
 (ख) विस्तार गरिदा ५० हेक्टर
 (ग) नयाँ निर्माण गरिदा हेक्टर
 (घ) जम्मा सिंचाई हुने क्षेत्रफल १६५ हेक्टर

११. सिंचाई-बाट-लाभान्वित-हुन-सक्ने-जनसंख्या-:

- घरधुरी २०२
 - जनसंख्या ३६०८

१२. आयोजनाको-लाभ-अतुरोध-गर्नु-पर्ने-कारणहरू-: यो योजना अर्को २५ लाख दिइएको १९५

प्रकारको निष्कर्ष तका सुझाव अर्को २५ लाख योजना हो-हुन दिइएको
 बस्तीको अभावले गर्दा योजनाको अर्को २५ लाख गर्नु पर्ने स्थिति अर्को
 ५० लाख हुन पाउ अर्को २५ लाख अर्को २५ लाख हुन/

१३. किसानहरू-द्वारा-हुन-सक्ने-योगदान-र-सहभागीताको-विवरण-: १५५५५५ ५५५५५५

कृषकहरूले योजनाको कुल लाग्ने सचको आधारमा १ देखि ५ प्रतिशत सम्म नगद योगदान गर्नु पर्ने र
 ६ - देखि २० प्रतिशत सम्म भ्रमदान गर्नु पर्ने छ । नगद र भ्रमदान समेत गरि प्रतिहेक्टर रु.
 रु. २५००१ - देखि रु. ४०००१ - सम्म कृषकहरूले व्यहोर्नु पर्ने छ । जिल्ला सिंचाई कार्यालयको
 सिफारिसमा नगद र भ्रमदानको लागि व्यहोर्नु पर्ने रकम चाहिएमा कृषि बैकबाट ऋण स्वरूप
 उसलव्य हुन सक्ने छ ।

१४. उपरोक्तनुसार आयोजना निर्माण । नविकरणको लागि माग गर्न सिंचाई क्षेत्र मित्र । अन्य घर-मुलोहरूको नामावली नगरपालिका । गाउँ विकास समिति र वडा नं सहित
 लुगु बाजकुली सिंचाई आयोजना
 क्रमांक-६ रिक्तस्थली योद्धि.

सि.नं.	घर मुलोको पुरा नाम थर वतन	परिवार	सिंचित	लालपुजा	दस्तखत वा ओठाको
१.	गोर्खा ... रवानी	७	२ रोपनी	६	
२.	काश्या ...	६	२ रोपनी	६	
३.	कुशी ...	२	"	६	
४.	बाजु ...	६	२ "	६	
५.	मोहन ...	७	२ रोपनी	६	
६.	राम ...	६	६ रोपनी	६	
७.	बहादुर ...	६	६	६	
८.	बहादुर ...	६	६	६	
९.	गोर्खा ...	६	१ रोपनी	६	
१०.	सुमान ...	७	३ रोपनी	६	
११.	बालु ...	४	१ १/२ "	६	
१२.	गोपाल ...	७	१२ रोपनी	६	
१३.	दीनार ...	१०	१ रोपनी	६	
१४.	शारदा ...	७	६ रोपनी	६	
१५.	बाराशाम ...	२	१ "	६	
१६.	सौरभ ...	५	२ "	६	
१७.	कुशी ...	६	४ "	"	
१८.	राम ...	७	१ "	"	
१९.	राम ...	४	१ "	"	
२०.	कमल ...	५	१ "	"	
२१.	राम ...	१०	२ १/२ "	६	
२२.	बहादुर ...	६	२ १/२ "	६	
२३.	बहादुर ...	२	१ "	६	

०५३ ६४-७०

SUBPROJECT REQUEST

DATE

The District Irrigation Engineer
District Irrigation Office
Balitpur District

Sir:

We the undersigned hereby request assistance from your office for the construction/rehabilitation of the following irrigation scheme the descriptions of which are contained in the duly accomplished Subproject Request Form herewith attached.

Name of Subproject: Tika Shaisab No. 1 R.P. District: Balitpur
Village(s) : kele V.D.C. Ward No.(s):

We hope to be advised by your office of any action regarding this matter.

Very truly yours,

REQUEST SUBMITTED BY

Name	Position	Village and Ward No.
Bhaji Bahadur Thapa	V.D.C. Chairman	Kele V.D.C. Ward No. 9
Rishi Bahadur Deshar	"	Chajagore V.D.C.
Tulsi Ramol	"	Thapa V.D.C. Ward No. 4
Kamal Thapa	"	Shri Subdesh V.D.C. Ward No. 1
Jit Bahadur Thapa	"	Srin Kote V.D.C. Ward No. 5
Suresh Bahadur Thapa	"	Dhapkhet V.D.C. Ward No. 5
.....
.....

SUBPROJECT REQUEST FORM

1. Name of Subproject : Tika Bhausaab No. 1, R.P.
 2. Location of the Subproject : hele
 2a. Principal Village(s) covering subproject area :

Village Name	Ward No.
Hele V.D.C.	7-9
Chapagan V.D.C.	1-5, 8, 9
Thasubhashi V.D.C.	1, 3, 5, 6, 8, 9
Thecha V.D.C.	1-9
Dhapaikhel V.D.C.	1-5, 7-9
Surakotlu V.D.C.	1-9

- 2b. Name of nearest roadhead : haganikhel - Hele
 2c. Distance of Subproject Command Area from the nearest roadhead, 0:35 km.
 2d. From the roadhead, how could someone reach the subproject's command area?
 Walking / / 4-wheel vehicle / / 2-wheel vehicle
 2e. If by walking, how long would it take? 0:30 hours

3. Subproject Status (Request is for)
 / New Scheme / Improvements to Existing Scheme
 / Extension of Area of Existing Scheme.
 4. Do the farmers have any existing organization (i.e., Water Users Group, Water Users Committee, etc.) in relation to this proposed scheme?
 Yes / / No

If yes, please state: Name of the organization Tika Bhausaab No. 1 R.P. Dist. Maintenance, Rehabilitation Committee
 Date of formation

Name of Officers/ Leaders	Position in the Farmers Organization	Function in the Farmers Organization
<u>Kashihal Madasjan</u>	<u>Chairman</u>	
<u>Krishna Bahadur Desai</u>	<u>Secretary</u>	
<u>Santihal Mehera</u>	<u>Member</u>	
<u>Balkrishna Madasjan</u>	<u>Member</u>	

5. Type of scheme/water sources.

/ Surface Scheme / / Lift Scheme / / Groundwater

6. If surface or lift scheme, what is the name of the river/stream?

Nalla Khata, K. Hale Khata

7. Number of offtakes upstream and downstream of the existing/proposed diversion point on this river/stream or basin

8. Are there any existing/potential problems on water rights of the proposed subproject? / / Yes / / No. If yes, please explain.

9. Command area of the Subproject (in hectares)

9a. Existing	:	500	ha
9b. Proposed Extension	:	100	ha
9c. New	:		ha
9d. Already Irrigated	:		ha

Handwritten notes: 200, 600, 75, 100, 100

Note: 1 ha = 20 ropani = 1.5 bigha

10. Number of beneficiaries (To be taken from attached list).

Household	:	2355
People	:	17497

11. Reasons for request.

11a. If existing scheme is not functioning since last 2-3 years or more give physical damages in the scheme due to which the scheme became defuncting. *Went washed out at Nalla Khata by huge flood during R.S. 2038, Seepage in the lining canal & earthen canal*

11b. If the existing scheme is functioning but water supply is interrupted at several time during canal operation, list only the most critical canal component/structure which contribute for interruption of canal operation. *Seepage in the lining canal, the earthen canal, the lining canal & seepage in the earthen canal due to seepage gate, etc.*

11c. If existing scheme is functioning but it has potential to extend its service area and needs technical and financial help, list down in order of priority, the additional structural support required
.....
.....
.....
.....

12. Contributions and participation proposed by farmers.

12a. Are the farmers willing to form a Water Users Association?

/ Yes / / No

12b. Are the farmers willing to contribute a share to the subproject cost?

/ / Yes / / No

12c. How do the farmers plan to make their contributions to the subproject cost?

/ / Put up own cash / / Loan from ADBN / / Through labor contribution.

12d. Are the farmers willing to enter an agreement with the Department of Irrigation (DOI) on the construction/ rehabilitation of the proposed scheme?

/ / Yes / / No

12e. Are the farmers willing to take over the operation and management of the irrigation scheme after completion of construction/rehabilitation?

/ Yes / / No

13. List of household heads in the proposed command area (To be listed by VDC by ward).

Name of Village *hele, Chapaga, Dhasuwabashi, Thecho, Dhapakhel*
Ward No. *2, Sarakoti, V.D.C.*

S.N	Full Name of Household Head	Total No. of People in each Household*	Operated Land holding (ha) in CA	Signature Thumb Print
1	Durga Bahadur Khedka	7	12-0-0 Kapaui
2	Jagat Bahadur Deshar	7	3-0-0 "
3	Rabha Bis Maharjan	5	3-0-0 "
4	Jagat Maharjan	9	2-8-0 "
5	Madhve.ka K.K.	5	1-0-0 "
6	Bhim Bahadur Maharjan	7	3-1-0 "

* Including who are working away seasonally.

NOTE: IT IS TO BE NOTED BY THE FARMERS MAKING THIS REQUEST THAT UPON RECEIPT OF GENUINE DEMAND, IDENTIFICATION OR ASSESSMENT WILL BE DONE BY THE TECHNICAL PERSONS OF THE DISTRICT IRRIGATION OFFICE AND AT WHICH TIME THE FARMERS HAVE TO PARTICIPATE AND COOPERATE IN PROVIDING THE NECESSARY DATA AND INFORMATION AND IN THE CONDUCT OF SURVEYS, MAPPING, ETC.

IRRIGATION SECTOR PROJECT

SUBPROJECT PROFILE

SHALINADI I.P.

Name :

Type/classification :

1. LACATION

- 1.1 Region : Cental
- 1.2 Zone : Bagmati
- 1.3 District : Kathmandu
- 1.4 V.D.C : Sankhu, Labi Phedi
- 1.5 Ward No. :
- 1.6 Village :
- 1.7 Elevation :
- 1.8 Latitude : 27° N
- 1.9 Longitude : 85° E
- 1.10 Toposheet No. : 72

2. ACCESS

- 2.1 By road : Kathmandu - Sankhu
- 2.2 By trail :

Name	Location	No. of days walk	Distance
From	Kathmandu		
Roadhead	Kathmandu		
Airstrip	Kathmandu		
District centre	Kathmandu		
- 2.3 Description of route : Kathmandu - Sankhu road about 13 km from Kathmandu city and 3 km from Sankhu to Project site.

3. CLIMATE

- 3.1 Season : Spring, monsoon, winter
- 3.2 Mean annual rainfall : 1250 mm.
- 3.3 Temperatures
 - Mean daily minimum : 2° C. [January]
 - Mean daily maximum : 28° C. [June]
- 3.4 Evapotranspiration
 - Minimum : 2.9 mm/day
 - Maximum : 5.70 mm/day

4. TOPOGRAPHY

- 4.1 Main canal :
- 4.2 Command area : Terrace & plain area.

5. SOILS

5.1	Soil type	Area (%)	Present Crops
1.	Gravel mixed soil	15	millet
2.	Silt loam	50	paddy & wheat
3.			
4.	Clay loam	35	paddy, wheat & potato.

5.2 Seepage/deep percolation
District data/manuals
Side tests, if any

NA.

6. WATER RESOURCES

6.1 Name of source : Shali Hadi
6.2 Type of source : perennial
6.3 Average flows :
6.4 Max. flows :

Month	Min. m ³ /s	Max. m ³ /s	Predicted m ³ /s	Mean Flow m ³ /s

6.4 Flow measurements

Month	Flow l/s	Measured by	Method used

7. WATER RIGHTS NA. (NOT applicable)

7.1	Upstreams Name of scheme	Discharge(l/s)	Area (ha)
1.	None .		
2.			
3.			
4.			
5.			

1. POPULATION

- 1.1 Number of households : 1400.00
 1.2 Total population : 14000.00
 1.3 Ethnic groups

Name	Percentage	Number
1. Newars	71.0	10000.00
2. Brahmins	12.0	1500.00
3. Chhetris	5.0	1000.00
4. Others	12.0	1500.00

- 1.4 Migration
 Annual migration rates : N/A applicable.

Seasonally Permanently

None.

Main reasons for migration

2. LAND TENURE AND FARM SIZE

2.1 Land tenure	Number	Percentage
a) Land owners		70.0
b) Tenants		30.0
c) Tenants & owners		—
d) Landless		—

- 2.2 Farm Size
- | | Irrigated (%) | Rainfed (%) | Total (%) |
|---------------------|---------------|-------------|-----------|
| Small 0.20 ha. | | | |
| medium 0.50 ha. | | | |
| large 0.80 ha. | | | |
| very large 1.20 ha. | | | |

3. FOOD SUPPLY AND MARKET SITUATION

- 3.1 Food surplus/deficit area : *just sufficient*
 3.2 Market Location *Sankhu, Jorpati & Kathmandu*
 Traded agricultural products :

Type of Product	Sold	Bought	Quantity(kg)	Value(NRS)
1. <i>None.</i>				
2.				

ORGANIZATIONS

- 4.1 Irrigation
 a. Description present water users group/association, committee, communal, non stock, non profit

Water users Group.

- b. Committee profile

Name	Duties	Elected/ appointed	Remuneration benefits	Other appt.

- c. Functions of the organization
 Maintenance Type of works

Frequency

Maintenance

Desilting of Canal

Twice in a year

Repairs

Type of works

Frequency

Repairs

Minor repair works.

as per requirement.

Resource mobilization

Arrangement for resource mobilization.

Average annual resource required

cash (NRS)

labor (mandays)

4.2 Other organizations *None.*

5. PRESENT FINANCIAL COMMITMENTS

Total amount of loans taken by existing groups/organization in the command area. *None.*

6. FARMERS COMMITMENT TO THE REQUESTED SUBPROJECT

Written request *Agreement is given in their request form.*
Agreement to cost sharing conditions *Yes.*

Agreement to assume full responsibility for O&M after completion of the project. *Yes.*

Quality of present maintenance works *See sensible maintenance only during season.*

Level of technical difficulty of requested assistance *Simple & etc.*

C. THE SUBPROJECT

1. PROJECT TYPE :

2. COMMAND AREA

Existing	Rainfed (ha)	Irrigated (ha)	Total
		150.00	400.00 ha.
Extension	250.00		

3. EXISTING IRRIGATION INFRASTRUCTURE

3.1 Canal discharge : *450 lps.*

3.2 Duty : *3 lps per ha.*

3.3 Diversion structure Type *Crafted Weir*

Length *16.0 M.*

3.4 Topographical and geographical conditions of intake site

Gentle Sloping river valley

3.5 Main canal

Discharge *450.0 lps.*

Length *6.0 kms.*

Type *Lined & unlined.*

Material

Soil type	H. rock	M. rock	BMS	Chainage
Hill slopes	<15 dgr	15-30 dgr	30-45 dgr	>45 dgr

Slide/erosion zones
Type

Chainage

- 1.
- 2.
- 3.
- 4.
- 5.

Sections requiring rock blasing or tunneling

3.6 Main canal structures
Type and size Chainage (M)

Weir
Super passage
Aqueduct
pipe - xing
E.C.P.C
Foot bridge
etc

3.7 Secondary canal
canal length 2.0 km.
canal structures *round x-ing, Super passage*

PROJECT BACKGROUND

Project requested by : *Buddha Bhakta Chitrakar & Others.*
Project studies :
Feasibility study prepared by :
Designed and completed by :

SCOPE OF WORK

Head works

Type : *Weir*
Diversion requirement : *Control Structure to minimize seepage water.*

Main canal

Design discharge : *1200.00 cfs.*
Canal sections : *Rectangular - lined canal*
Trapezoidal - unlined canal.

Type of excavation

H. rock M. rock BMS Earth

D. AGRICULTURAL PRODUCTION

1. EXISTING LAND USE

	Ha	% GCA
Irrigation land		
a. Spring	150.0	100.00
b. Monsoon		
c. Winter	120.0	80.00
Rainfed land		
a. Spring	125.0	50.00
b. Monsoon		
c. Winter	90.0	60.00
Forest/shrubs		
Grazing land		
Other, specify		

2. TYPICAL ANNUAL CROPPING PATTERN AND YIELD IN THE AREA

Crop	Area ha	%	Yield t/ha	Production tons	Planting DATE	Harvest DATE
Paddy	280	70	3.0	840.0	June/July	Oct/Nov
Wheat	160	40	1.50	240.0	November	April
Potato	100	25	7.0	700.00	January	April
oil seeds	40	10	0.40	16.0	November	February

Cropping intensity 145%

3. ESTIMATED FUTURE CROPPING PATTERN AND YIELDS

Crop	Area ha	%	Yield t/ha	Production tons	Planting DATE	Harvest DATE
Early paddy	400	100	4.0	1600.00	June/July	Oct/Nov
Wheat	140	35	2.0	280.00	Nov.	April
Early potato	160	40	10.0	1600.00	Oct.	January
oil seeds	40	10	0.50	20.00	Nov.	February
Second potato	120	30	10.0	1200.00	Jan/Feb	April

Cropping intensity 215%

Slope stabilization works
Type

Chainage

- 1.
- 2.
- 3.
- 4.
- 5.

Main canal structures :

Aqueduct
Superpassage
Escapes
Drop structures
Foot bridge -
Other

Branch canals

4. PRESENT INPUTS

Crop	Seed kg/ha	Fertilizer organic chem. Kg/ha	Pesticides NRs/ha	Labor md/ha	6/11/12
Paddy	300.0	130 kg (80+30+20)	R ₁ 50.00	222	45
Wheat	100.00	90 kg (60+30+0)	—	120	40
Potato	1000.00	140 kg (80+30+30)	R ₁ 100.00	130	40
oilseed	9.00	40 kg (20+20+0)	—	90	26

5. ESTIMATED FUTURE INPUTS

Crop	Seed kg/ha	Fertilizer organic chem. Kg/ha	Pesticides NRs/ha	Labor md/ha	6/11/12
E. Paddy	300.0	140 kg (100+20+20)	R ₁ 100.00	237.0	40
Wheat	100.00	150 kg (100+30+20)	—	142.0	45
B. Potato	1000.00	240 kg (120+60+60)	R ₁ 150.00	150.0	40
oilseeds	9.00	40 kg (20+20+0)	—	95.0	26
Second Potato	1000.00	240 kg (120+60+60)	R ₁ 150.00	145.0	40

E. SUBPROJECT IMPLEMENTATION

1. SUBPROJECT IMPLEMENTATION ARRANGEMENT

Method	Type of works	Quantity
Voluntary Contribution	Earth work & land provision & Stone collection.	
Petty contracts	Head work, lining & canal,	
Medium/large contracts	Canal work & structural works etc.	

2. PROPOSED IMPLEMENTATION SCHEDULES

(See attached figure)

SUBPROJECT IDENTIFICATION QUESTIONNAIRE

This questionnaire has been developed for use by a team consisting of a junior engineer and senior overseer based in the DOI district offices. The data collected during the course of a brief visit to the proposed subproject site should be sufficient to identify a potential subproject for further study at feasibility level, or to reject the subproject where feasibility seems unlikely due to technical, economic or social reasons. The completed questionnaire is to be forwarded to the District Office for the decision on the subproject future.

A representative group of farmers should assist the data collection. The nature and purpose for the visit and that the visit is no guarantee of a future subproject should be clearly explained to the farmers.

Subproject Name : *Shali Nadi I.P.* Reference No :

Region *central*

Zone *Bagmati*

District *Katmandu*

Village Development Committee *Sankhu, Lapsiphedi,*

Ward Nos.

Topo Sheet No. *72*

Aerial photo No.

Latitude (N) *27°* N

Longitude (E) *85°* E

2 Subproject Status

New/Improvements/Extension *Improvement & extension.*

3 History of Project (if existing)

Year built *2042 B.S.*

By whom *HMG; Dept. of irrigation.*

Is there a WUC (Yes/No) *Yes.*

Is there a WUC (Yes/No) *No.*

1 Type of Scheme

Surface water/Ground water/Lift *Surface Water*

5. Command Area (ha)

Existing *150.0 ha.*New (or extension) *250.0 ha.*Total area *400.00 ha.*Type (Tar, Terrace, Plain, etc.) *Plain.*6. Water Source *Shali Nadi*River name (surface or lift scheme) *Shali Nadi*Flow at time of visit (m^3/s or l/s)Estimated minimum discharge (m^3/s or l/s)Estimated base monsoon discharge (m^3/s or l/s)

7 Prior Water Rights.

Describe all farmer managed systems serving the proposed command or with prior rights to the water source. How many households and how much land is served in each system and any potential conflicts? Can agreement be reached on water sharing? Explain.

8 Catchment Condition *Plain Land.*

9 Headworks

Give brief description of river at proposed site (slope, width, bed material, stability, etc.)

*Slope - Gentle Slope.**Bed material - Gravel mixed soil.**Stability - Stable**River width - 16.0 M.*

Prepare a sketch of the intake site, showing type of intake proposed.

10 Canal System

Approximate length of main canal (km)

4.0 km. Branch - 2.0 km
Total: 6.0 kms.

Number of natural drain crossings:

- large (> 10 m span) 1.0 nos.
- small (< 10 m span) 5.0 nos.

11 Landslide, Flood and Soil Erosion Problems

Canal Line

Command Area

Soil erosion problem in Command area.

12 Problems on Existing Schemes

Discuss with farmers problems with existing schemes and agree priorities for improvements. List these in order of priority:

- (i) Seepage Control.
- (ii) Maintenance of lined Canal.
- (iii) Extension of Canal length & Command area.
- (iv) Repair & maintenance of existing structure.

13 Soils

Discuss texture and depth of soils with farmers and note general situation in command area and any problems:

Silt loam, Sandy loam & Gravel mixed soil.

14 Existing Land Use Within the Command Area

Irrigated land 150.0 ha (only in summer)

Rainfed crop land 250.00

Forest —

Grazing land —

(400.00 ha)

15 Existing Cropping Pattern and Yields

Irrigated Land

Area (ha)	Spring Crops %	Yield	Monsoon Crop %	Crop	Yield t/h	Winter Crop %	Crop	Yield t/ha
150.0			100	paddy	3.50	Wheat 80		1.60
						Potato 20		6.0

Rainfed Crop Land

250.0			50	paddy	2.40	Potato 10		4.0
			40	maize	1.80	Wheat 60		1.4
			10	millet	1.00	oilseed 10		0.4

16 Food Situation

Is subproject in food surplus or deficit area? *just sufficient.*

If in deficit for how many months is there enough food?

NA.

17 Land Tenure and Holdings

Tenure type

Land owners	%	70.0
Tenants	%	30.0
Landless	%	—

Average land holding (ha) *12.0 ropani*

Are there any large landowners? *Yes.*

How many *6* Average land holding *24.0 ropani*.

18 Accessibility

Nearest road head *Katmandu - Shankhu.*

Distance from road head to project site *1.0 km.*

Porter days (Hills) *15 minutes, walk.*

Marketing

Nearest market Distance (km or hours)

Shankhu

0.5 km.

20 Agricultural Inputs

Item	Nearest source	Distance (km or hours)
Fertilizers	Pvt. dealers.	0.50 km.
Pesticides	Pvt. dealers.	0.50 km.
Improved seeds	From farmers themselves	

21 Extension Services

Nearest Agricultural Service Centre	Distance (km or hrs)
Sanku	0.50 km.
Nearest Resident JT/JTA	Distance (km or hrs)
Sanku	0.50 km.

22 Credit

Is the project area under SFDP?	Yes/No	No
Nearest ADBN	Distance (km or hrs)	
Inprayni	2.0 km.	

23 Number of Beneficiaries in the Command Area (the identification teams' own estimate) 2500

Number of households by ethnic group

Ethnic group	Households
Newars	1000.00
Brahmins	150.00
Chhetri	100.00
Other	150.00

People (population in project area) 14000.00

If this differs from figure given in the request form, why? No.

24 Farmers' Attitude in Project

1. Are they interested in the project?

2. Why? / Good / Bad / Do not explain why. They are in continuous contact with district irrigation office regarding project implementation.

Are farmer prepared to enter into agreement with Government to:

- (a) provide land free of cost for canal lines: YES
- (b) contribute their share of cost according to Government policy*: YES
- (c) participate in the construction process : YES
- (d) assume project responsibility after completion of construction or rehabilitation YES
- (e) construct tertiary, quaternary and field channels at their own cost and/or, with their own labour: YES

* Indicative Proportions of Government's and Farmers' Contribution to Capital Costs for Surface Water Schemes d/

Farmers' Contribution

Unit Cost of Construction	Government Contribution	Farmers' Contribution	
		Total Cash	Labor <u>a/</u>
		Max. (Rs/ha)	Min. (Rs/ha)
As per cent of total cost			
1.			
2.			
3.			
4.			

a/ Labor contribution can also be in cash, loan or in kind (e.g. land)

b/ Generally applicable to subprojects located in Terai

c/ Generally applicable to subprojects located in the Middle and Remote Hills.

d/ For shallow tubewells and power pumps the Government contribution is 10% of total cost and the farmers contribution (cash/loan) is 60% of total cost.

Subproject Identification Visit

Subproject visited by

L. P. SINGH
Engineer

Overser

Date of Visit

11th July 1993.

Signatures

Date of reporting

Laxman Pat Singh
Engineer

6th Aug. 1993.

Overseer

- 26 People Met During Visit (i) Mr. Budeh - Bhaubi Chikarwan - Suntele - 1
(ii) Mr. Krishna - Bhanita Shrestha - Lapsikedi - 1
(iii) Mr. Madan Bahadur Shrestha - Suntele - 3
27 Recommendations (iv) Mr. Krishna raj Subedi - Suntele - 8

First of all the source is perennial and beneficiaries are also very much enthusiastic towards the project. As they are ready to contribute cash as well as manual labour for the project. Therefore, the project is recommended for ~~TRR~~ programme.

His Majesty's Government
Department of Irrigation
CENTRAL REGIONAL IRRIGATION DIRECTORATE
District Irrigation Office
Bhaktapur

Identification Survey of
Mahadev Khola Irrigation System

Report

VDC : Dadhikot
District : Bhaktapur
Zone : Bagmati
Region : Central

Bhaktapur
July, 1993

CONCLUSION AND RECOMMENDATION

The following are the conclusion and recommendation regarding the project.

1. This project is a historical one and it has been maintaining and operating by government side. As per the field visit and discussion with the local people they are habituated by birth and stamp in mind that such projects should be up-graded and operated by the D.I.G . and not by themselves. They feel that they are not able to maintain and operate this system.
2. Due to illiteracy, socio-economic problem as well as political influence it is very much difficult to unite the different groups in to a single group of water users. They understand every thing, but due to lack of coordination and local disputes no one cooperate each other.
3. After the implementation of I.S.P. projects it is clearly reflected that the area where the Newar people are dominant there is the better performance in peoples participation and coordination between them as well as they try to keep better relationship with the Government agencies. On the other hand most of the Brahmins and Chhetri are of the contrast nature. It could be known by them selves, who are of cooperative nature.
4. It is most essential task to up-grade the old historical projects of Bhaktapur districts and is a most difficult task to turnover the projects to the water users group (W U A) after its completion without a vast programme of motivation, enhancement of awareness and free interaction between the users and the agencies before the implementation of the project.
5. It is mentioned in ^{some of} the request form that they are not interested to have any cost sharing of the project in the form of labour and cash. In this situation it is difficult and unnecessary to impose any project over the people.
6. Although the users have been committed to share a proportionate fraction of the projects cost in the form of labour and cash, but it has become very much difficult in the running projects to collect the labour contribution during the period of construction therefore it is recommended to provide a clear/controlling measure which would be helpful for the physical progress of the project.

SALIENT FEATURE

1. Name of System	: Mahadev khola Irrigation System
2. Sub project classification	: Hill
3. Village Development board	: Dadhikot and Balkot
4. Ward no	: Dadhikot 3,4,5,6 Balkot 9to1
5. District	: Bhaktapur
6. District head Quater	: Bhaktapur
7. Zone	: Bagmati
8. Development region	: Central
9. Total main canal length	: 5112m
10. Idle length	: 458m
11. No of branch canal	: 20
12. Total length of branch	: 6110m
13. Type of canal	: Lined and unlined
14. Gross command area	: <u>347 ha (Proposed)</u>
15. Net command area	: <u>200 ha (developed)</u>
16. Name of source	: Mahadev khola
17. Type of source	: Perennial
18. Canal design discharge	: 500 lit/sec
19. Side slope of canal	: Vertical
20. Bed slope	: Natural bed (1:200)
21. Diversion structure	: Permanent
22. Catchment area	: 432 k.m ²
23. Maximum river discharge	: 40m ³

Subproject Name: MAHADEV. KHOLA. IRRIGATION Reference Nr:

1 Subproject Location

Region

CENTRAL

Zone

BAGMATI

District

BHAKTAPUR

Village Panchayat DEV. COMMITTEE

BADHIKOT AND BALKOT

Ward Nrs

72 E/6

Topo sheet Nr

BB02-199

Aerial photo Nr

Latitude (°N)

Longitude (°E)

2 Subproject Status

New/Improvements/Extension

IMPROVEMENTS

3 History of Project (if existing)

When built

2012 B.S.

M.M.G.

Is there a WUG? (Yes/No) Yes (but not legal)

Are there any shallow tubewells in the subproject area? no

Type of Scheme
Surface water/Ground water/Lift Surface water

Command Area (ha)
Existing 347
New (or extension)
Total area 347 ✓
Type (Tar, Terrace, Plain, etc.) Tar Terrace and plain

Water Source Perennial
River name (surface or lift scheme) Mahadev. kbola (Surface)
Flow at time of visit (m³/s or l/s) 70. lit/sec minimum
Estimated minimum discharge (m³/s or l/s) More than 100 lit/sec
Estimated base monsoon discharge (m³/s or l/s) More than 500 lit/sec

Prior Water Rights
Describe all farmer managed systems serving the proposed command or with prior rights to the water source. How many households and how much land is served in each system and any potential conflicts? Can agreement be reached on water sharing? Explain.
There are not any farmer's managed system in this source

Catchment Condition
Thin bush Agricultural land; and jungle

Headworks
Give brief description of river at proposed site (slope, width, bed material, stability, etc.)
Hilly river. Approximately 1:30 slope narrow width and gravel mixed soil as a bad material of river

Prepare a sketch of the intake site, showing type of intake proposed

10 Canal System

Approximate length of main canal (km)

Idle: 458m

Total: 5112

Number of natural drain crossings:

- large (> 10 m span) no

- small (< 10 m span) one

11 Landslide, Flood and Soil Erosion Problems

Canal Line

At chainage of 240.23 m long land slide area is developed during monsoon and last year a lot of repairing work is required.

Command Area

Tar Terrace and plain area are the main nature of command area

12 Problems on Existing Schemes

Discuss with farmers problems with existing schemes and agree priorities for improvements. List these in order of priority:

Land slide, control land seepage are the main problems of the area as well as other maintenance works are necessary

13 Soils

Discuss texture and depth of soils with farmers and note general situation in command area and any problems:

Sandy loam is the dominant soil in the command area and it is found 1m to 3mⁱⁿ depth

14 Existing Land Use Within the Command Area

Irrigated land (ha)	347
Rainfed crop land (ha)	no
Forest (ha)	no
Grazing land (ha)	no
Total (ha)	347 ha

15 Existing Cropping Pattern and Yields

Irrigated Land

Area (ha)	Spring Crops %	Yield	Monsoon Crop %	Yield	Winter Crop %	yield
347			100%	3 to 4 ton		
347					100%	3 to 4 ton

Rainfed Crop Land

16 Food Situation

Is subproject in food surplus or deficit area? ...equal

If in deficit for how many months is there enough food?

17 Land Tenure and Holdings

Tenure type

Land owners %	60%
Tenants %	38%
Landless %	2%

Average land holding (ha)

Are there any large landowners? no

How many Average land holding

- 18 Accessibility
- Nearest road head A gravel road is passing from the middle of the command area
- Distance from road head to project site
- Km (Toral) X..... Porter days (Hills) X.....
- 19 Marketing
- Nearest market: Thimi..... Distance (km or hours) 3 k.m.
- 20 Agricultural Inputs
- | Item | Nearest source | Distance (km or hours) |
|----------------|--------------------|------------------------|
| Fertilisers | <u>Thimi</u> | <u>3 k.m.</u> |
| Pesticides | <u>.....</u> | <u>.....</u> |
| Improved seeds | <u>.....</u> | <u>.....</u> |
- 21 Extension Services
- Nearest Agricultural Service Centre Thimi and kathmandu..... Distance (km or hrs.) 3.8.....
- Nearest Resident JT/JTA Bhaktapur..... Distance (km or hrs.) 6 k.m......
- 22 Credit
- Is the project area under SFDP? Yes/No no.....
- Nearest ADBN branch Bhaktapur..... Distance (km or hrs.) 6 k.m......
- 23 Number of Beneficiaries in the Command Area (the identification teams' own estimate)
- Number of households by ethnic group
- | Ethnic group | Households |
|----------------------|----------------|
| <u>Newar</u> | <u>4225</u> No |
| <u>chhetri</u> | |
| <u>Bramins</u> | |
| <u>other</u> | |

- People (population in project area) 25350.0.....
- If this differs from figures given in the request form, why?
- 24 Farmers' Attitude to Project
- General interest in project:
- Enthusiastic/Good/Fair/Poor; explain why.
- A long interaction is necessary between users group and project
- Are farmers prepared to enter into agreement with Government to:
- (a) provide land free of cost for canal lines; no
- (b) contribute their share of cost according to Government policy*; yes
- (c) participate in the construction process yes
- (d) assume project responsibility after completion of construction or rehabilitation; yes
- (e) construct tertiary, quaternary and field channels at their own cost and/or with their own labour no

*Indicative Proportions of Government's and Farmers' Contribution to Capital Costs for Surface Water Schemes^{d/}

Unit Cost of Construction	Government Contribution	Farmers' Contribution				
		Total	Cash	Labor ^{a/}	Max (Rs/ha)	Min (Rs/ha)
		As per cent of total cost				
1. less than 10,000 ^{b/}	75	25	5.0	20.0	2,500	---
2. 10,000-20,000 ^{b/}	85	15	2.5	12.5	3,000	2,500
3. 20,000-40,000 ^{c/}	91	9	1.75	7.25	3,600	3,000
4. 40,000-60,000 ^{c/}	93	7	1.0	6.0	4,200	3,600

^{a/} Labor contribution can also be in cash, loan or in kind (e.g. land).

^{b/} Generally applicable to subprojects located in Terai.

^{c/} Generally applicable to subprojects located in the Middle and Remote Hills.

^{d/} For shallow tubewells and power pumps the Government contribution is 40% of total cost and the farmers contribution (cash/loan) is 60% of total cost.

25 Subproject Identification Visit

Subproject visited by D. R Pokhrel
Engineer

D. Vishwakarma.
Overseer

Date of visit 50/1/30

Signatures Date of reporting

..... 50-3-80

Engineer

.....

Overseer

26 People Met During Visit

1) Purna prasad Neupane Village chairman

2) Ramji. Prasad Neupane Chairman (user group)

3) Keshab Neupane

4) Prakash Neupane

27 Recommendations

Recommended for implimentation.....

.....

ANNEX - 6

AGRICULTURAL DEVELOPMENT AND FARM ECONOMY

ANNEX - 6

AGRICULTURAL DEVELOPMENT AND FARM ECONOMY

Table of Contents

	<i>page</i>
1. AGRICULTURAL DEVELOPMENT PLAN	6 - 1
1.1 Basic Concept	6 - 1
1.1.1 Development Needs	6 - 1
1.1.2 Agricultural Development Strategy	6 - 2
1.1.3 Basic Development Plan	6 - 2
1.2 Proposed Cropping Pattern	6 - 3
1.2.1 Basic Concept of the Proposed Cropping Pattern	6 - 3
1.2.2 Proposed Cropping Pattern	6 - 4
1.3 Proposed Farming Practice	6 - 6
1.4 Anticipated Yields and Production	6 - 9
1.5 Crop Budget and Irrigation Benefits	6 - 10
1.6 Farmers' Economy	6 - 11
2. RECOMMENDATIONS	6 - 13
2.1 General	6 - 13
2.2 Organization of Vegetable Growers Group	6 - 13
2.3 Establishment of Vegetable Collection Centres	6 - 13

List of Tables

	<i>page</i>
Table 6 - 1 Monthly Labour Balance under With Project Condition in Each Scheme	6 - 15
Table 6 - 2 Summary of Future Labour Balance in Each Scheme	6 - 20
Table 6 - 3 Planted Area and Cropping Intensity with Project Condition	6 - 22
Table 6 - 4 Planted Area under Without and With Project Condition	6 - 23
Table 6 - 5 Summary of Recommended Farming Practices	6 - 24
Table 6 - 6 Recommended Varieties of Vegetables	6 - 25
Table 6 - 7 Anticipated Unit Yield With Project Condition	6 - 26
Table 6 - 8 Unit Yield and Production under Without and With Project Condition	6 - 27
Table 6 - 9 Financial Cost and Return under Without and With Project Condition	6 - 28
Table 6 - 10 Economic Cost and Return under Without and With Project Condition	6 - 30
Table 6 - 11 Financial Irrigation Benefit under Without and With Project Condition	6 - 32
Table 6 - 12 Economic Irrigation Benefit under Without and With Project Condition	6 - 33
Table 6 - 13 Net Farm Income Without and With Project Condition	6 - 34
Table 6 - 14 Farm Budget of Typical Farm in Each Scheme	6 - 35
Table 6 - 15 Farm Budget of Typical Farm in the Project Areas	6 - 48

List of Figures

	<i>page</i>
Figure 6 - 1 Criteria and Procedure of Evaluation for Crop Diversification Potential	6 - 49
Figure 6 - 2 Proposed Cropping Pattern	6 - 50
Figure 6 - 3 Vegetable Cropping Rotation Menu	6 - 55
Figure 6 - 4 Cropping Rotation Calendar for 2 years	6 - 56

1. AGRICULTURAL DEVELOPMENT PLAN

1.1 Basic Concept

1.1.1 Development Needs

HMGN has made efforts to promote agricultural development in conformity with the objectives of the Eighth Five Year Plan (1992 - 1997) and top priority has been given to the development of the agricultural sector. The program which aimed at attaining national self-sufficiency in food production will be continued. Together with the achievement of self-sufficiency in cereal crops, agricultural diversification towards cash crops, fruit, vegetables, and livestock will be emphasized, taking into consideration the comparative geographical advantages, transportation facilities, market accessibility as well as the supply and demand conditions.

The selected 13 model schemes are located in the high potential area for agricultural production, which is blessed with favourable soil and climatic conditions. In addition to these natural conditions, farm inputs, markets, technical information, and services are easily available in the Project Area. Farmers in the Project Area are carrying out farming practices at a higher level than any other area in Nepal although the average holding size is as small as 0.24 ha.

As mentioned above, agriculture in the Project Area is far more developed than in any other region in Nepal in relation to productivity and technology adopted. And this area would be expected to play an important role as a food supply base to the Kathmandu metropolitan area, as well as a model area for commercialized agriculture.

Development needs of the Project are assessed from the viewpoints of (1) production stabilization, (2) crop diversification, and (3) socio-economic condition. The conclusions are summarized below:

(1) Production stabilization

Agriculture in the Project Area mainly depends on the rains due to the superannuated and damaged condition of facilities of the selected irrigation schemes. There is considerable variation of rainfall year by year. Most of the annual rainfall occurs during the rainy season from June to September and is affected by erratic climatological conditions. These are main factors causing unstable production in the Project Area.

Due to the superannuated and damaged condition of existing irrigation facilities, the water source of each scheme is not used effectively and irrigation water is insufficiently distributed. In addition to this, demand for domestic water supply is increasing recently.

Each irrigation scheme can supply supplemental irrigation water to farmlands, however, even supplemental water can be distributed, it is important to stabilize farm production. Therefore, rehabilitation and improvement of those schemes are urgently required.

(2) Crop diversification

At present, the main crops in the Project Area are paddy and wheat. Potatoes and beans are also grown to some extent. The yields of these crops are higher than those in other areas. However, most of the farmers in the Project Area have not yet introduced vegetable farming due to the shortage of irrigation water in the dry season and at the beginning of the rainy season.

Moreover, crop intensity in the Project Area is limited because of the shortage of irrigation water, but the Project Area has abundant potentials for full agricultural development.

It is envisaged to diversify the crops into high value crops and to increase the cropping intensity for economical development of this area through the stable and continuous irrigation water supply.

(3) Socio-economic condition

Rapid urbanization is going on and influences the agricultural condition in the Project Area. Especially it causes a rapid increase in urban food demand, not only cereal grains but also vegetables and so on, which depend on the supply from other areas including importations at present. On the other hand, farmers in the Project Area are having more job opportunities than other areas and rural people are increasing non-farm income.

Meanwhile, there is every indication that many farmers living near the urbanized areas are going to sell their farmland for housing or to rent it for brick making. This causes a rapid decrease of good farmlands.

In order to meet the urban food demand, the Project Area should play an important role as a food supply base to the Kathmandu metropolitan area, especially fresh vegetables and high value crops. It is necessary to keep superior farm areas as a base of supply of fresh vegetables to the Kathmandu metropolitan area and to ensure higher income to the farmers by introducing high value crop cultivation. It is also recommended to create intensive agricultural areas such as "green belts".

1.1.2 Agricultural Development Strategy

Considering all the above mentioned factors, the basic concept of agricultural development under the Project is set as follows:

- (1) To maximize the potential agricultural benefits through the efficient use of limited water and land resources.
- (2) To maintain the agricultural areas and increase the crop intensity for supplying vegetables to meet the increasing food demand in Kathmandu.

In order to achieve these objectives, the strategy for agricultural development under the Project is as follows:

- (1) To maintain a stable amount of cereals for self-consumption which minimize the cereal production area by maximizing the unit yields of cereal crops through the provision of stable irrigation water.
- (2) To expand the cultivated area of vegetables by maximizing the efficiency of irrigation water supply.

1.1.3 Basic Development Plan

The basic approach to future farming in the Project Area is formulated based on the development strategy for the efficient use of available land and water resources through the rehabilitation of the irrigation schemes.

From the viewpoint of increasing agricultural income of the farmers, agricultural production should be commercialized by diversifying crops into high value crops such as vegetables. In order to diversify crops, it is necessary (i) to provide a stable supply of irrigation water, (ii) to distribute the irrigation water smoothly to the whole area, and (iii) to increase the cropping intensity.

1.2 Proposed Cropping Pattern

1.2.1 Basic Concept of the Proposed Cropping Pattern

The potential for crop diversification of each of the selected model schemes has to be evaluated and the farmland are classified into two types, the "Intensive-area" type and "Remote-area" type. Moreover, taking into consideration the detailed water availability conditions, these types are further classified into the following five types.

Intensive-I area :

This area has the highest potential for agricultural development and it should become a model agricultural area. Farming in this area should be converted to high value crop cultivation under the fully irrigated condition. The most intensive cropping pattern should be adopted in this area. About half of the area will be used for vegetable cultivation three times a year, including green leaf vegetables. It is desired that this area will be kept as an intensive agricultural area.

Intensive-II area :

This area also has high potential for agricultural development. But water availability is less than in the "Intensive - I area". In the dry season, the cropping intensity will be kept lower in order to save water.

Intensive-III area:

From the viewpoint of land suitability and socio-economic condition, this area has also the potential of introducing vegetable farming. However, water availability is the least among the Intensive areas. In the dry season, the cropping intensity will be kept lower than the Intensive-II area in order to save water.

Remote-I area :

Most of this area is located far from access roads and villages, so it is difficult to manage the farmland under the most intensive cropping pattern and it takes time to carry the products to the market. The area extends in the lowest water distribution area. Its topographic condition also is not so suitable for fresh vegetable cultivation. Drought-resistant crops such as legumes and bulb crops would be introduced in this area.

Remote-II area :

This is the driest area among the "Remote" type areas. In this area, irrigation water is insufficient in the winter season, mainly in February or March. Winter crops, which grows for shorter growing period than above, would be introduced just after harvest of summer season crops, so that they would be harvested before February or March.

In the evaluation of the potential for crop diversification, each scheme is subjected to a screening based on a variety of factors. For this purpose, the following four main factors are taken into account:

- Water resources availability
- Land suitability
- Accessibility to market areas
- Socio-economic conditions

Water resources evaluation is based on information collected during the farm survey. Land suitability depends mainly on the topographic condition of the farmland and accessibility based on the distance to the main markets and the condition of roads. Socio-economic conditions are evaluated according to the degree of urbanization, industrialization such as brick factories, and farmers' attitude and preference to move towards a diversified cropping pattern. The evaluation flow chart is shown in Figure 6-1.

As a results of above evaluation, the farmland of each scheme is divided into two parts, "Intensive-type" area and "Remote-type" area, and indicated as a combination of these two farmland types and their extent.

1.2.2 Proposed Cropping Pattern

Considering the basic strategy for agricultural development under the project, vegetables in addition to paddy, wheat, and potatoes have been selected as the main crops in the framework of the proposed cropping pattern. A basic cropping pattern has been selected for each farmland type area by taking into account the following factors:

- the water requirement based on the availability of irrigation water during the dry season
- present farming practices and crops
- availability of family labour, and
- socio-economic conditions

These basic cropping patterns, summarized below and shown in Figure 6-2, would be introduced after the irrigation schemes are rehabilitated.

Farmland type	Annual Cropping Pattern			Rate of Applied Area
Intensive-I area	Paddy	- Potatoes	- Potatoes	(25%)
	Paddy	- fallow	- Potatoes	(25%)
	Summer Veg.	- Winter Veg.	- Green Leaf Veg.	(50%)
Intensive-II area	Paddy	- Potatoes	- fallow	(25%)
	Paddy	- fallow	- Potatoes	(25%)
	Summer Veg.	- Winter Veg.	- Green Leaf Veg.	(50%)
Intensive-III area	Paddy	- Potatoes	- fallow	(25%)
	Paddy	- fallow	- Potatoes	(25%)
	Summer Veg.	- Winter Veg.	- Green Leaf Veg.	(25%)
	Summer Veg.	- Winter Veg.		(25%)
Remote-I area	Paddy	- fallow	- Potatoes	(25%)
	Paddy	- Legumes		(25%)
	Summer Veg.	- Bulb crops		(25%)
	Summer Veg.	- Winter Veg.		(25%)
Remote-II area	Paddy	- Early Potatoes		(25%)
	Paddy	- Legumes		(25%)
	Summer Veg.	- Bulb crops		(25%)
	Summer Veg.	- Winter Veg.		(25%)

The cropping pattern of each scheme is determined by taking into account profitability, peak water requirement, and labour requirement. The water balance study is described in Annex 5 (Section 3.2.1).

As for the future labour requirement, even at the peak requirement period in early November, 43% of the total available labour force will be participating under the "with" project condition after the introduction of the proposed cropping pattern as shown in Table 6-1 and summarized in Table 6-2.

The planted area under the proposed cropping pattern for each scheme is shown in Table 6-3. The planted area under "without" and "with" project conditions is shown in Table 6-28 and summarized below. The average cropping intensity of the 13 schemes is 226%, ranging from 208% for the AB-12 Kutudhal and AB-14 Mahadev Khola schemes to 248% for the AK-25 Shali Nadi scheme.

Crops	Unit : ha	
	Without Project	With Project
Paddy	1,616	864
Wheat	1,184	0
Maize	91	0
Mustard	163	0
Legumes	65	268
Early potatoes	22	212
Late potatoes	22	130
Potatoes	185	383
Summer vegetables	0	864
Winter vegetables	0	603
Green leaf vegetables	0	309
Bulb crops	0	261
Total planted area (Total Intensity)	3,349 194%	3,894 226%)

For vegetable farming, a "Cropping menu" is prepared, as shown in Figure 6-3. Growers may be selected for each cropping menu according to the marketing demand.

In the Intensive-I area, the overall cropping intensity is calculated to be 275%. The cropped areas allocated under the proposed cropping pattern will be 50% for paddy and 50% for summer vegetables in the rainy season and 25% for early potatoes, 25% for late potatoes, 50% for green leaf vegetables, and 50% for winter vegetables in the dry season. The cropping intensity of each crop is as shown below:

Crops	Unit : %				
	Int.-I	Int.-II	Int.-III	Remote-I	Remote-II
Paddy	50	50	50	50	50
Legumes	0	0	0	25	25
Early potatoes	25	0	0	0	25
Late potatoes	25	25	25	0	0
Potatoes	25	25	25	25	0
Summer vegetables	50	50	50	50	50
Winter vegetables	50	50	50	25	25
Green leaf vegetables	50	50	25	0	0
Bulb crops	0	0	0	25	25
Total Intensity	275	250	225	200	200

It is recommended that farmers in the Project Area introduce a two year crop rotation in order to reduce the risk of disease and the number of pests. For the successful cultivation of vegetable crops through the judicious use of land at the proper time, in order to obtain maximum yields, certain vegetables are rotated. The proposed crop rotation plan for the Project Area is illustrated in Figure 6-4. Crop rotation in the Intensive - I area is shown below:

Crop Rotation in Intensive - I area

1st crop year			2nd crop year			Intensity
- Paddy	- Early potatoes	- Late potatoes	- Summer veg.	- Winter veg.	- Leaf veg.	(25%)
- Paddy	- (fallow)	- Potatoes	- Summer veg.	- Winter veg.	- Leaf veg.	(25%)
- Summer veg.	- Winter veg.	- Leaf veg.	- Paddy	- Early potatoes	- Late potatoes	(25%)
- Summer veg.	- Winter veg.	- Leaf veg.	- Paddy	- (fallow)	- Potatoes	(25%)

The advantages of crop rotation are summarized below:

- Reduces the risk of disease and the number of pests
- Maintains the soil fertility balance
- Impedes the weed problem

1.3 Proposed Farming Practice

As the expansion of cultivated area of vegetables is one of the major strategies for agricultural development under the rehabilitated irrigation schemes, introduction of an improved farming practice for the vegetables is proposed.

The unavailability and lack of irrigation water coupled with the lack of technical know-how regarding the production of vegetables are the main problems in the Project Area. The farms in the Project Area are characterized as small-scale, high labour intensity, and high fertilizer application farms. Farming is more suitable to high value and high labour intensive crop production such as vegetables. Three crops per annum could be produced if irrigation water was available throughout the year. The farming practices proposed for the vegetables are outlined in the following paragraphs. A summary of the recommended practices are presented in Table 6-5.

(1) Seedbed Preparation

Immediately after harvesting previous crops, the land should be plowed using a turning plow. At least one month before planting begins, well rotted compost should be spread evenly over the area.

Soil in the seedbed should be 15 cm in depth, 1 meter in breadth, and 6 m in width and length. The size of seedbeds can be adjusted according to the farmers' need. There should be a distance of 30 to 40 cm between each bed. Beds should be cleaned by removing stubble, weeds, clogs, and levelled. 5 g of chemical fertilizer, such as urea, complex, and potash, per square meter should be well mixed with the soil.

It is also recommended that deep plowing after every two or three years be carried out in order to move lower soils upward and upper soils downward and to prepare fine seedbeds with fertile surfaces.

(2) Farm Input Application

The introduction of improved seeds is essential for increasing crop yields. Not only the variety but also the quality of the seeds influence crop yields. Improved varieties of each vegetable crop recommended by the Vegetable Development Division are shown in Table 6-6 and summarized below:

Crops	Varieties
Cauliflower	Kathmndu, Snowball, Pusa Deepali, Kibo Giant
Cabbage	Copenhagen Marhet, Pride of India, Late Large Drum Head
Radish	Mino Early, White Neck, Pyuthane Red, 40-days, Tokinashi
Carrot	Nantees, New Kuroda
Turnip	Purple Top
Tomato	Pusa Ruby, Monprecos, Chinese, Roma, pusa Early Dwarf, Cold set, CL-1131
Chilli	Pusa Jwala, NP46, Kathmandu
Brinjal	Pusa Purple Long, Sarlahi Green, Nurki, Pusa Kranti
Broad leaf mustard	KBL, Marpha Broad Leaf
Spinach	Patane
Onion	Red Creole, Light Red, Dark Red, Nuwakote
Cucumber	Kusume, Local, Pointset

The following fertilizer application rates are recommended for attaining the target yields of the respective crops:

Crops	Seeds (kg/ha)	Fertilizer (kg/ha)			Compost (ton/ha)
		Complex	Urea	Potash	
Cauliflower	0.7	300	90	40	20
Tomato	0.5	300	90	133	10
Broad leaf mustard	6.0	200	133	66	10
Onion	10.0	200	45	85	10

Nitrogen gives the plant a dark green color, promotes rapid plant growth, enhances the quality of the leaf, and increases yields. Phosphorous stimulates early root formation, hastens maturity, stimulates flowering, and aids seed formation. Potassium increases vigor and disease resistance of the plants and improves the quality of fruits. Organic manure such as compost is important in the successful cultivation of all crops. In order to maintain the organic matter / fertility of the soil not only compost will be applied, but the crops will also be rotated with leguminous crops.

Fertilizer application for root crops is recommended to be carried out by broadcasting after ploughing. Fertilizers for fruit crops and leaf crops are to be applied between plant rows by mixing with compost to prevent the loss of elements.

(3) Sowing and Planting

There are two seedling techniques for the proposed farming. One is to prepare seedlings in a nursery bed, and thereafter, to transplant the seedlings in a main field. This practice will be applied to cole, fruit, cucurbit, leaf, and leguminous crops. The other farming technique is direct sowing in the main field. This technique will be applied to root crops.

In the case of the preparation of seedlings, kinder seedlings should firstly be grown in small beds with shade roofing, and then transplanted in a nursery bed which has sufficient space. Seedlings will be transplanted in the main field with a recommended space, at about 30 days after they have been sown.

Under the direct sowing method, control of the number of seedlings by thinning out them, will be required after they have grown to some extent.

(4) Water Management

Due to the limited amount of water available in the Project Area, farmers should adopt water management practices, i.e. when, how much, and methods to supply it. For this

reason, farmers' groups organized under the same terminal irrigation block should discuss and determine the irrigation schedule and the amount of water to be supplied.

The first irrigation for vegetables should be done quickly with a little quantity till the seeds germinate and plants survive, and the subsequent irrigation should be done according to their requirements.

(5) Plant Protection and Weeding

As for the plant protection measures, the intensive application of insecticides and fungicides is required in order to control and protect crops from the damage caused by insects, pests, and diseases. At present, damage of crops, not only vegetables but also other crops is not so serious. In order to control insects and diseases, the following measures will be taken:

- Destruction of refuse and plants harboring insects and disease
- Eradication of affected plant parts and plant
- Ploughing of the farmland
- Rotation of crops
- Utilization of clean planting materials
- Adjustment to the sowing or planting time
- Utilization of resistant varieties
- Treatment of seeds for controlling insects and disease
- Regulation by soil treatment
- Application of chemicals

In order to keep vegetables free from attack by insects and disease, farmers should inspect the vegetable fields regularly, at least three times a week. This helps vegetable growers to take the necessary actions against insects, pests and disease, on time. When vegetable cultivation is introduced on a commercial basis, it will be necessary to apply agro-chemicals properly for pest and disease prevention. For applying of agro-chemicals to the fields, a knapsack type sprayer is used and is easily managed by farmers.

Weeding is one of the essential works to be done according to the proposed farming practices for crop protection. After seeding and transplanting, weeding would be carried out two or three times, depending on the condition of the weed growth.

(6) Harvesting

Harvesting will be carried out manually by the farmers labour force since the capacity of the labour force in the Project Area is large.

1.4 Anticipated Yields and Production

After the Project has been completed, it is envisaged that the unit yields of crops will become stabilized and will increase due to the continuous and proper supply of irrigation water. The unit yields of crops in the case of "with Project" are estimated on the basis of the trainers' manual prepared by the HMG and the farm survey results. The trainers' manual sets out a recommended practice for all crops and presents a range of unit yields. Vegetable yields in areas surrounding the Project Area, such as "Thimi", represent the typical unit yields in advanced vegetable cultivation areas under full irrigation in the Kathmandu Valley. Then, the vegetable yields in the Project Area under the "with" Project condition are estimated based on the present yields in advanced vegetable cultivation areas. The unit yields of paddy and legumes in these areas have already attained a high level compared with other areas in Nepal, therefore the anticipated unit yields of these crops are set at a slightly high level, considering the proposed proper water management under the Project.

In the "without" Project condition, the future anticipated unit yields of crops are set at the same level as the present unit yields which are estimated based on the results of the farm survey. It is believed that the present constraints which are responsible for the water shortage, remain unchanged.

The anticipated unit yields under the future "without" and "with" Project conditions are estimated in Table 6-7 and summarized below:

Crops	Unit : ton/ha		
	Present Condition	Without Project	With Project
Paddy	4.2	4.2	5.2
Potatoes	10.0	10.0	15.0
Early & Late potatoes	8.5	8.5	12.0
Broad beans	1.4	1.4	1.5
Cauliflower	15.9	-	16.0
Tomatoes	12.0	-	12.0
Broad leaf mustard	19.6	-	20.0
Onions	18.3	-	18.0

Based on the crop yields mentioned above, the anticipated crop production in the case of "with" and "without" Project in each scheme is estimated as presented in Table 6-8 and summarized below:

Crops	Unit : ton		
	Without Project	With Project	Balance
Paddy	6,840	4,490	- 2,352
Wheat	2,340	0	- 2,340
Malze	130	0	- 130
Mustard	100	0	- 100
Legumes	70	390	310
Potatoes	2,230	8,750	7,630
Vegetables	0	30,710	30,710

Vegetable yields will increase gradually due to the farmers' accumulation of experience and knowledge regarding vegetable cultivation. Farmers in the Project Area can easily obtain information and knowledge from surrounding vegetable pocket areas. It is expected that the unit yields will attain the anticipated level five years after the completion of the irrigation Projects.

1.5 Crop Budget and Irrigation Benefits

Based upon the proposed farm input requirements under the "without" and "with" project conditions discussed in section 1.3, the financial and economic crop budgets for respective crops are elaborated in Table 6-9 and 6-10, respectively. A summary of the financial crop budget is presented below:

Unit : NRs per ha

Crops	Without Project			With Project		
	Gross Income	Production Cost	Net Return	Gross Income	Production Cost	Net Return
Paddy	39,280	9,944	29,337	48,280	12,558	35,722
Wheat	16,400	7,823	8,578			
Maize	11,290	4,211	7,080			
Mustard	10,130	2,352	7,778			
Broad beans	16,320	3,770	12,551	18,000	4,715	13,286
Garden peas	13,040	1,365	11,675			
Early & Late potatoes	59,500	20,811	38,689	77,000	32,970	44,030
Potatoes	70,140	20,811	49,329	91,000	32,970	58,030
Summer vegetables*				91,800	17,073	74,727
Winter vegetables*				139,680	18,606	121,074
Green leaf vegetables*				118,000	20,717	97,284
Bulb crop *				97,200	37,958	59,243

Remarks : * Summer vegetables (Tomatoes), Winter vegetable (Cauliflowers),
: Green leaf vegetables (Broad leaf mustard), Bulb crop (Onions)

By applying the net return per ha under the "without" and "with" project conditions, the total returns are calculated for the Project Area under both conditions and the incremental net benefits of the 13 selected schemes are considered to be irrigation benefits.

The irrigation benefits will be generated and increased from year to year, depending on the progress of the rehabilitation of the Project. Five years after the rehabilitation of the irrigation facilities, it is expected that the irrigation benefits will attain the expected level and will be continuously sustained afterwards.

At the full development stage, the financial and economic irrigation benefits under the "without" and "with" project conditions are estimated as shown in Table 6-11 and 6-12 respectively, and summarized below:

Unit : 10³ NRs

No. of Scheme /	Name	Net Farmland Area (ha)	Financial Irrigation Benefit			Economical Irrigation Benefit		
			Without Project	With Project	Irrigation Benefit	Without Project	With Project	Irrigation Benefit
Kathmandu District								
AK-04	Biswambhara	92	4,141	13,112	8,971	3,694	14677	10982
AK-05	Boshan	122	5,427	15,548	10,122	5,054	17442	12389
AK-07	Dakshinkali	67	2,612	9,549	6,937	2,663	10688	8025
AK-14	Indrayani	101	5,019	14,395	9,375	4,506	16112	11606
AK-25	Shali Nadi	157	8,859	24,227	15,367	8,960	27059	18158
Bhaktapur District								
AB-02	Bidol	32	1,510	4,078	2,568	1,316	4575	3259
AB-10	Katunje	40	1,890	4,823	2,933	1,698	5394	3697
AB-12	Kutudhal	43	2,084	4,522	2,438	1839	5041	3202
AB-14	Mahadev Khola	112	5,047	12,388	7,341	4366	13883	9517
Lalitpur District								
AL-10	Kotkhu	246	10,845	31,351	20,506	9823	35171	25348
AL-13	Lubhu	130	5,470	16,228	10,759	4934	18215	13281
AL-19	Thika Bhairaw-I	497	21,501	63,340	41,839	18972	71056	52084
AL-20	Thika Bhairaw-II	88	3,940	12,542	8,602	3338	14039	10701

1.6 Farmers' Economy

In order to assess the irrigation rehabilitation project from the farmers' economic viewpoint, an analysis of the farm budget of typical farmers was carried out under both "with" and "without" Project conditions.

The net farm income will increase after the implementation of the Project. The increasing rate of the net farm income ranges from 400% in the Intensive area of the AL-19 Thika Bhairaw-I and AL-20 Thika Bhairaw-II schemes to 86% in the Remote area of the AB-12 Kutudhal scheme, as shown in Table 6-13.

The farm budgets of typical farm size households in the selected 13 model schemes are described in Table 6-14 and summarized in Table 6-15. The estimate indicates that the farm income of typical size farms under the "with-Project" condition is expected to be much higher than that under the "without-Project" condition. The average annual net reserve or the capacity to pay is NRs. 16,000 to NRs.74,000 in the Intensive area and NRs. 8,000 to NRs.27,000 in the Remote area, as shown in the following table:

Unit : NRs.1,000

Schemes	Farm Size (ha)	Family Size	Without Project	With Project		
				Intensive	Remote	
Kathmandu District						
AK-04	Biswambhara	0.41	5.9	13	74	46
AK-05	Boshan	0.28	5.6	3	44	21
AK-07	Dakshinkali	0.28	5.9	6	47	24
AK-14	Indrayani	0.37	5.7	16	69	39
AK-25	Shali Nadi	0.27	6.4	12	47	25
Bhaktapur District						
AB-02	Bidol	0.19	6.0	1	26	10
AB-10	Katunje	0.24	5.9	9	34	18*
AB-12	Kutudhal	0.30	5.6	6	38	18*
AB-14	Mahadev Khola	0.26	5.9	1	26	9*
Lalitpur District						
AL-10	Kotkhu	0.19	5.3	1	25	9
AL-13	Lubhu	0.23	6.2	4	29	18
AL-19	Thika Bhairaw-I	0.25	5.8	1	35	15
AL-20	Thika Bhairaw-II	0.13	5.9	1	16	5

Note * : For a conservative estimation, the farmer's budget in the remote area is estimated to be the same as that of the downstream area where no irrigation water will be available in the dry season due to a water shortage.

Judging from the results of the analysis, each scheme is financially justified from the beneficiaries' viewpoint.

2. RECOMMENDATIONS

2.1 General

The Project will contribute to an increase in the unit yields of crops and crop production through the rehabilitation of the irrigation schemes. In order to ensure that there are irrigation / agricultural benefits and to maintain the high project sustainability of the proposed irrigation projects over their useful life, the following agricultural supporting activities are required to be strengthened:

- Organization of Vegetable Growers Groups
- Establishment of Vegetable Collection Centres

2.2 Organization of the Vegetable Growers Groups

Individual farmers in the Project Area have little experience with producing vegetables for commercial purposes. For intensive agricultural farming, it is of vital importance for them to learn and understand the cultivation technology and to cooperate with farm operations and marketing in groups, such as planting, irrigation, harvesting, storage, packaging, transportation, selling and purchase of seeds and equipment.

Under the present extension services provided by DADO, the farmers who are interested in vegetable farming in the service area of the centre are organized and trained on farming techniques. At present such growers' groups have not yet been organized in each scheme area.

After the completion of the Project, all the farmers will be able to introduce vegetable cultivation. Accordingly, all the farmers in the terminal unit of WUA in each scheme should be organized into VGG, under the supervision of DADO and DIO, in order to manage vegetable farming and marketing in close cooperation, such as transfer / exchange of technical know-how, procurement of farm inputs and equipment, and production marketing together with the provision of proper O & M irrigation facilities.

As mentioned in the above chapter, the terminal unit of WUA will be organized for the purpose of operating and maintaining the irrigation scheme on the basis of the tertiary irrigation block, which covers 5 ha. This unit organization of WUA will also function as a VGG.

2.3 Establishment of Vegetable Collection Centres

In order to strengthen the activities of VGG, marketing facilities such as vegetable collection centres should be established in each terminal unit irrigation block area. These centres are places where farmers in the unit area gather their products together for shipping.

After harvesting, the farmers clean, select, and package their products for marketing. Then they transport their products to places located near access roads to markets, in the early morning. The mode of transportation generally used by farmers to transport vegetables to the markets is minibuses. Normally, a minibus is hired by a group of farmers, but sometimes individual farmers get their own transportation.

The main problems related to vegetable marketing in the production area, are that it takes time to transport the products and to sell them in the markets. Due to the perishable nature of vegetables, farmers lose many of their products. The price of vegetables mostly fluctuates according to the harvesting period and is decided by face to face trading between sellers and buyers.

The shipping of all the farmers' products together, by the members of VGG, will prove to be advantageous to the member farmers. They can hire minibuses regularly and the

vegetables, which are gathered from the members' farms and taken to the vegetable collection centre, are transported to the market place by the representative members. In addition, through discussions held, they can coordinate the cropping schedule according to the market demand. Through price negotiation, they will be able to fetch a better price for the products because they are supplied regularly and timely.

The vegetable collection centre will play an important role in VGGs' activities, not only as the place where farmers gather their products but also the place where the farmers discuss VGGs' activities, such as the farming schedule including the irrigation period, extension of new cultivation techniques, and present constraints and the countermeasures in their area. In order to successfully implement the Project and achieve the targets in the Project Area, it is necessary to establish vegetable collection centres, although this depends on the availability of land. The condition of the recommended vegetable collection centres is as follows:

Location and area :

Minibus are often parked along the premises, therefore it is necessary for the centre area to have parking space, or when space is inadequate, along the main or approach roads.

Since water is needed for cleaning the vegetables, it will be more suitable for the centre to be located near a water source such as a river or an irrigation canal.

Taking into account the volume of products which will be gathered in the collection centre during the peak period, the area of the collection centre is recommended to be 30 m².

Facilities :

The recommended facilities are buildings with cement floors with two-sided roofs, and storage rooms for storing equipment such as packaging materials.

Operation & Maintenance

O&M of the collection centre is carried by the VGG. A management system should be decided by VGG members.

Tables

Table 6-1 Monthly Labour Balance under With Project Condition in Each Scheme (1/5)

AK-04 B/wambhura	Farm Population (1,232)		Economically Active Population Rate (59.0%)						Agriculture Labour Rate (43.8%)						Farm land area (92 ha)			Total										
	Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.		Dec.							
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early		Late	Early	Late	Early	Late					
A. Labour Force Available (1000 man-days)	5.3	5.0	5.3	5.4	5.1	5.1	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	5.3	5.3	126.1				
B. Labour Requirement for Farming Activities	Proposed rate of Basic Cropping Pattern :																											
	Intensive - I (50%)																											
	Remote - I (50%)																											
1) Paddy (50%) (50%) 46ha (monthly requirement : 1,000 man-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	216				
2) Potato (25%) (25%) 23ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato -1 (25%) (0%) 12ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	226	
4) Early Potato -2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	18	17	44	41	5	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	31	46	24	226	
6) Late Potato (25%) (0%) 12ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.4	0.5	0.3	0.2	0.2	0.5	0.1	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	0.0	0.0	226	
7) Legumes (0%) (25%) 12ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147	
8) Green Leaf Veg.-1 (50%) (0%) 23ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	11	24	325	
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
10) Summer Veg. (50%) (50%) 46ha (monthly requirement : 1,000 man-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	137	
11) Winter Veg. - 1 (50%) (0%) 23ha (monthly requirement : 1,000 man-days)	31	17	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	39	48	39	390
12) Winter Veg. - 2 (0%) (25%) 12ha (monthly requirement : 1,000 man-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	
13) Spices (0%) (25%) 12ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	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	7.0
Total Labour Use (Total area : 239ha)	2.4	2.1	2.4	3.0	3.5	3.4	2.3	2.3	2.0	1.9	2.4	3.2	3.5	2.9	2.6	2.4	2.1	1.7	1.7	3.4	3.8	4.5	3.6	3.1	61.0			
C. Balance [A - B]	2.8	3.2	2.9	2.3	1.8	2.0	3.0	3.0	3.2	3.4	2.8	2.1	1.8	2.4	2.7	2.9	3.1	3.6	3.5	2.8	1.5	0.8	1.6	2.1	61.0			
[BA = 5%]	47	40	46	36	66	63	43	43	39	36	46	60	66	54	49	46	41	32	31	46	72	85	69	59	52			

AK-05 Boshun	Farm Population (1,440)		Economically Active Population Rate (72.1%)						Agriculture Labour Rate (46.5%)						Farm land area (122 ha)			Total											
	Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.		Dec.								
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early		Late	Early	Late	Early	Late						
A. Labour Force Available (1000 man-days)	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	10.0	10.0	10.0	138.9			
B. Labour Requirement for Farming Activities	Proposed rate of Basic Cropping Pattern :																												
	Intensive - I (30%)																												
	Remote - I (70%)																												
1) Paddy (50%) (50%) 61ha (monthly requirement : 1,000 man-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	216			
2) Potato (25%) (25%) 31ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato -1 (25%) (0%) 9ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	226	
4) Early Potato -2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	18	17	44	41	5	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	31	46	24	226	
6) Late Potato (25%) (0%) 9ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.3	0.4	0.2	0.2	0.2	0.4	0.4	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	2.1		
7) Legumes (0%) (25%) 21ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147
8) Green Leaf Veg.-1 (50%) (0%) 18ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	11	24	325	
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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		
10) Summer Veg. (50%) (50%) 61ha (monthly requirement : 1,000 man-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	19.9		
11) Winter Veg. - 1 (50%) (0%) 18ha (monthly requirement : 1,000 man-days)	31	17	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	39	48	39	390
12) Winter Veg. - 2 (0%) (25%) 21ha (monthly requirement : 1,000 man-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		
13) Spices (0%) (25%) 21ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	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	13.0	
Total Labour Use (Total area : 271ha)	2.5	2.1	2.3	3.4	4.6	4.5	2.8	2.5	2.4	2.5	3.2	4.2	4.6	3.8	3.3	3.1	2.7	2.0	2.2	3.4	5.2	5.9	4.7	3.6	81.7				
C. Balance [A - B]	7.4	7.9	7.7	6.6	5.3	5.5	7.2	7.4	7.5	7.5	6.7	5.7	5.4	6.2	6.6	6.9	7.2	7.9	7.7	6.5	4.7	4.0	5.2	6.4	57.1				
[BA = 9%]	25	21	23	34	46	45	28	26	25	25	32	42	46	38	34	31	27	20	23	34	53	59	47	36	31				

AK-07 Dhakshinkul	Farm Population (1,412)		Economically Active Population Rate (72.7%)						Agriculture Labour Rate (63.2%)						Farm land area (67 ha)			Total											
	Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.		Dec.								
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early		Late	Early	Late	Early	Late						
A. Labour Force Available (1000 man-days)	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	189.4				
B. Labour Requirement for Farming Activities	Proposed rate of Basic Cropping Pattern :																												
	Intensive - I (50%)																												
	Remote - I (50%)																												
1) Paddy (50%) (50%) 34ha (monthly requirement : 1,000 man-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	216			
2) Potato (25%) (25%) 17ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato -1 (25%) (0%) 8ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	226	
4) Early Potato -2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	18	17	44	41	5	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	31	46	24	226	
6) Late Potato (25%) (0%) 8ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.3	0.4	0.2	0.2	0.1	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9		
7) Legumes (0%) (25%) 8ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147
8) Green Leaf Veg																													

Table 6-1 Monthly Labour Balance under With Project Condition in Each Scheme (2/5)

<AK-14 Indravati>	< Farm Population (1,611)												Economically Active Population Rate (71.1%)				Agriculture Labour Rate (61.9%)				Farm Land area (10 ha)		Total						
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.			Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late				
A. Labour Force Available (1000 man-days)	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	20.0				
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern :												Intensive - I (50%)				Remote - I (50%)				>								
Int.-I Remt.-I																													
1) Paddy (50%) (50%) 51ha (monthly requirement : 1,000 man-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	12	26	39	29	18	7	9	8	8	21	20	18	1	0.0	216		
2) Potato (25%) (25%) 25ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato-1 (25%) (0%) 13ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18	226
4) Early Potato-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
6) Late Potato (25%) (0%) 13ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5	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	226
7) Legumes (0%) (25%) 13ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147	
8) Green Leaf Veg.-1 (50%) (0%) 25ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	11	24	325		
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29	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	17	41	325		
10) Summer Veg. (50%) (50%) 51ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	13	30	34	40	41	43	36	33	26	22	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	327	
11) Winter Veg.-1 (50%) (0%) 25ha (monthly requirement : 1,000 man-days)	34	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14	27	33	39	33	24	39	48	43	39	48	43	39	390			
12) Winter Veg.-2 (0%) (25%) 13ha (monthly requirement : 1,000 man-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	19	38	48	38	29	26	45	64	55	28	390						
13) Spices (0%) (25%) 13ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25	54	92	72	50	15	610				
Total Labour Use (Total area : 240ha)	2.7	2.3	1.6	3.2	3.8	3.6	2.5	2.5	2.2	2.1	2.7	3.5	3.8	3.1	2.8	2.6	2.3	1.9	1.9	2.7	4.2	4.9	4.0	3.4	71.4				
C. Balance [A - B]	5.9	6.3	6.0	5.4	4.8	5.0	6.1	6.1	6.4	6.5	5.9	5.1	4.8	5.5	5.8	6.0	6.3	6.8	6.7	5.9	4.3	3.7	4.6	5.2	135.7				
[B/A = %]	31	27	30	38	44	42	29	29	26	24	31	40	44	36	33	30	27	22	22	31	48	57	46	40	34				

<AK-25 Shall Nadi>	< Farm Population (3,780)												Economically Active Population Rate (67.5%)				Agriculture Labour Rate (50.4%)				Farm Land area (57 ha)		Total						
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.			Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late				
A. Labour Force Available (1000 man-days)	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	375.5				
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern :												Intensive - I (70%)				Remote - I (30%)				>								
Int.-I Remt.-I																													
1) Paddy (50%) (50%) 79ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	26	39	29	18	7	9	8	8	21	20	18	1	0.0	216				
2) Potato (25%) (25%) 39ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato-1 (25%) (0%) 27ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18	226
4) Early Potato-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
6) Late Potato (25%) (0%) 27ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5	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	226
7) Legumes (0%) (25%) 12ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147	
8) Green Leaf Veg.-1 (50%) (0%) 57ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	1.9	0.9	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	11	24	325		
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29	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	17	41	325		
10) Summer Veg. (50%) (50%) 79ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	13	30	34	40	41	43	36	33	26	22	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	327	
11) Winter Veg.-1 (50%) (0%) 57ha (monthly requirement : 1,000 man-days)	34	17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14	27	33	39	33	24	39	48	43	39	48	43	39	390			
12) Winter Veg.-2 (0%) (25%) 12ha (monthly requirement : 1,000 man-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	19	38	48	38	29	26	45	64	55	28	390						
13) Spices (0%) (25%) 12ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25	54	92	72	50	15	610				
Total Labour Use (Total area : 396ha)	5.1	4.5	5.2	5.7	5.8	5.5	4.2	4.5	3.8	3.3	4.2	5.4	5.9	4.9	4.4	4.2	3.8	3.2	3.1	3.9	6.2	7.6	6.3	6.0	116.7				
C. Balance [A - B]	10.5	11.2	10.4	9.9	9.8	10.1	11.5	11.1	11.9	12.4	11.5	10.2	9.8	10.8	11.2	11.4	11.9	12.4	12.6	11.7	9.4	8.1	9.3	9.6	258.8				
[B/A = %]	33	28	33	37	37	35	27	29	24	21	27	35	38	31	28	27	24	21	20	25	40	48	40	38	31				

<AB-02 Bidol>	< Farm Population (1,011)												Economically Active Population Rate (65.0%)				Agriculture Labour Rate (60.7%)				Farm Land area (32 ha)		Total						
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.			Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late				
A. Labour Force Available (1000 man-days)	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	116.5				
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern :												Intensive - I (30%)				Remote - I (70%)				>								
Int.-I Remt.-I																													
1) Paddy (50%) (50%) 16ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	26	39	29	18	7	9	8	8	21	20	18	1	0.0	216				
2) Potato (25%) (25%) 8ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato-1 (25%) (0%) 2ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18	226
4) Early Potato-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
6) Late Potato (25%) (0%) 2ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5	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	226
7) Legumes (0%) (25%) 6ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147	
8) Green Leaf Veg.-1 (50%) (0%) 5ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	11	24	325		
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29	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	17	41	325		
10) Summer Veg. (50%) (50%) 16ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	13	30	34	40	41	43																	

Table 6-1 Monthly Labour Balance under With Project Condition in Each Scheme (3/5)

SAB-10 Kuldhal	Farm Population (967)		Economically Active Population Rate (62.5%)						Agriculture Labour Rate (54.1%)				Farm Land area (40 ha)		Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.			Aug.		Sep.		Oct.		Nov.		Dec.			
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		
A. Labour Force Available (1000 man-days)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	95.5
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - III (50%) Remote - II (50%) >																										
Int.-III Remt.-II																											
1) Paddy (50%) (50%) 20ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.6	3.9	2.9	1.8	7	9	8	8	21	20	18	1	0.0	0.0	0.0	216
2) Potato (25%) (0%) 5ha (monthly requirement : 1,000 man-days)	2.4	1.1	1.1	1.1	4.2	4.1	5	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	1.1
3) Early Potato -1 (25%) (0%) 5ha (monthly requirement : 1,000 man-days)	1.7	4.4	4.1	5	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	1.3
4) Early Potato -2 (0%) (25%) 5ha (monthly requirement : 1,000 man-days)	1.8	1.7	4.4	4.1	5	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	1.1
5) Late Potato (0%) (0%) 0ha (monthly requirement : 1,000 man-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
6) Legumes (0%) (25%) 5ha (monthly requirement : 1,000 man-days)	0.8	8	6	6	2.8	2.9	2.5	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	0.7
7) Green Leaf Veg.-1 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	2.8	2.9	4.7	5.5	4.0	3.9	3.5	1.7	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
8) Green Leaf Veg.-2 (25%) (0%) 5ha (monthly requirement : 1,000 man-days)	4.5	3.3	3.8	6.3	5.9	2.9	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	1.6
9) Summer Veg. (50%) (50%) 20ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.7	0.8	0.8	0.9	0.7	0.7	0.5	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10) Winter Veg. -1 (50%) (0%) 10ha (monthly requirement : 1,000 man-days)	3.4	1.7	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	3.9
11) Winter Veg. -2 (0%) (25%) 5ha (monthly requirement : 1,000 man-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	2.0
12) Spices (0%) (25%) 5ha (monthly requirement : 1,000 man-days)	1.6	1.6	1.4	6.8	8.4	8.0	2.4	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	3.1
Total Labour Use (Total area : 85ha)	1.0	0.8	0.8	1.9	1.1	0.9	0.5	0.6	0.7	0.8	1.1	1.4	1.5	1.2	1.1	1.0	0.9	0.7	0.8	1.1	1.7	2.0	1.6	1.3	2.5	2.5	70.0
C. Balance [A - B]	3.0	3.2	3.2	3.0	2.9	3.1	3.4	3.4	3.3	3.2	2.9	2.6	2.5	2.7	2.9	2.9	3.0	3.3	3.2	2.9	2.3	2.0	2.4	2.7	2.7	2.7	25.5
[B/A = %]	25	20	19	24	27	22	13	15	17	20	27	35	38	31	18	26	23	19	19	27	41	51	41	32	32	27	

SAB-12 Kuldhal	Farm Population (803)		Economically Active Population Rate (67.0%)						Agriculture Labour Rate (45.6%)				Farm Land area (43 ha)		Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.			Aug.		Sep.		Oct.		Nov.		Dec.			
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		
A. Labour Force Available (1000 man-days)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	71.6
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - III (39%) Remote - II (70%) >																										
Int.-III Remt.-II																											
1) Paddy (50%) (50%) 22ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.6	3.9	2.9	1.8	7	9	8	8	21	20	18	1	0.0	0.0	0.0	216
2) Potato (25%) (0%) 3ha (monthly requirement : 1,000 man-days)	2.4	1.1	1.1	1.1	4.2	4.1	5	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	1.1
3) Early Potato -1 (25%) (0%) 3ha (monthly requirement : 1,000 man-days)	1.7	4.4	4.1	5	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	1.3
4) Early Potato -2 (0%) (25%) 3ha (monthly requirement : 1,000 man-days)	1.8	1.7	4.4	4.1	5	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	1.1
5) Late Potato (0%) (0%) 0ha (monthly requirement : 1,000 man-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
6) Legumes (0%) (25%) 8ha (monthly requirement : 1,000 man-days)	0.8	8	6	6	2.8	2.9	2.5	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	0.7
7) Green Leaf Veg.-1 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	2.8	2.9	4.7	5.5	4.0	3.9	3.5	1.7	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
8) Green Leaf Veg.-2 (25%) (0%) 3ha (monthly requirement : 1,000 man-days)	4.5	3.3	3.8	6.3	5.9	2.9	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	1.6
9) Summer Veg. (50%) (50%) 22ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.7	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10) Winter Veg. -1 (50%) (0%) 6ha (monthly requirement : 1,000 man-days)	3.4	1.7	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	3.9
11) Winter Veg. -2 (0%) (25%) 3ha (monthly requirement : 1,000 man-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	2.0
12) Spices (0%) (25%) 8ha (monthly requirement : 1,000 man-days)	1.6	1.6	1.4	6.8	8.4	8.0	2.4	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	4.6
Total Labour Use (Total area : 89ha)	0.8	0.7	0.8	1.1	1.2	1.0	0.7	0.6	0.7	0.9	1.1	1.5	1.6	1.3	1.2	1.1	1.0	0.7	0.8	1.2	1.8	2.2	1.8	1.2	2.7	2.7	27.0
C. Balance [A - B]	2.2	2.3	2.2	1.9	1.8	1.9	2.3	2.3	2.3	2.1	1.8	1.5	1.4	1.7	1.8	1.9	2.0	2.3	2.2	1.8	1.1	0.8	1.2	1.8	1.8	1.8	44.6
[B/A = %]	27	24	26	38	40	35	22	22	24	29	38	50	54	45	40	36	32	24	27	40	62	74	59	39	38	38	

SAB-14 Mahadev Khola	Farm Population (2,585)		Economically Active Population Rate (75.4%)						Agriculture Labour Rate (65.9%)				Farm Land area (112 ha)		Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.			Aug.		Sep.		Oct.		Nov.		Dec.			
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		
A. Labour Force Available (1000 man-days)	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	375.1
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - III (30%) Remote - II (70%) >																										
Int.-III Remt.-II																											
1) Paddy (50%) (50%) 56ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.6	3.9	2.9	1.8	7	9	8	8	21	20	18	1	0.0	0.0	0.0	216
2) Potato (25%) (0%) 8ha (monthly requirement : 1,000 man-days)	2.4	1.1	1.1	1.1	4.2	4.1	5	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	1.9
3) Early Potato -1 (25%) (0%) 8ha (monthly requirement : 1,000 man-days)	1.7	4.4	4.1	5	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	1.9
4) Early Potato -2 (0%) (25%) 20ha (monthly requirement : 1,000 man-days)	1.8	1.7	4.4	4.1	5	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	4.4
5) Late Potato (0%) (0%) 0ha (monthly requirement : 1,000 man-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
6) Legumes (0%) (25%) 20ha (monthly requirement : 1,000 man-days)	0.8	8	6	6	2.8	2.9	2.5	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	2.9
7) Green Leaf Veg.-1 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	2.8	2.9	4.7	5.5	4.0	3.9	3.5	1.7	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
8) Green Leaf Veg.-2 (25%) (0%) 8ha (monthly requirement : 1,000 man-days)	4.5	3.3	3.8	6.3	5.9	2.9	0.0																				

Table 6-1 Monthly Labour Balance under With Project Condition in Each Scheme (4/5)

<AL-10 Kolkhu>	< Farm Population (6,862)		Economically Active Population Rate (75.0%)						Agriculture Labour Rate (48.5%)						Farm land area		246 ha Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.			Sep.		Oct.		Nov.		Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late				
A. Labour Force Available (1'000 man-days)	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	728.8		
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - I (30%) Remote - I (70%) >																												
Int.-I Remt.-I																													
1) Paddy (50%) (50%) 123ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.6	3.9	2.2	0.9	1.1	1.0	1.0	2.6	2.5	2.2	0.1	0.0	0.0	216			
2) Potato (25%) (25%) 62ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226	
3) Early Potato -1 (25%) (0%) 18ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18	
4) Early Potato -2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
6) Late Potato (25%) (0%) 18ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5	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	226
7) Legumes (0%) (25%) 43ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147	
8) Green Leaf Veg.-1 (50%) (0%) 37ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	11	24	325	
9) Green Leaf Veg.-2 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29	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	17	41	325	
10) Summer Veg. (50%) (50%) 123ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	13	30	34	40	41	43	36	33	26	22	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	327	
11) Winter Veg.-1 (50%) (0%) 37ha (monthly requirement : 1,000 man-days)	34	17	0.0	0.0	0.0	0.0	1.6	3.7	4.2	4.9	5.0	5.3	4.4	4.1	3.2	2.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.2	
12) Winter Veg.-2 (0%) (25%) 43ha (monthly requirement : 1,000 man-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	
13) Spices (0%) (25%) 43ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	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	
Total Labour Use (Total area : 547ha)	5.1	4.2	4.6	6.8	9.3	9.0	5.6	5.1	4.9	5.0	6.5	8.5	9.2	7.6	6.7	6.2	5.5	4.1	4.5	6.0	10.5	11.9	9.5	7.2	164.8				
C. Balance [A - B]	25.3	26.1	25.8	23.5	21.0	21.4	24.7	25.2	25.4	25.4	23.8	21.9	21.1	23.7	23.6	24.2	24.9	26.3	25.8	23.5	19.8	18.4	20.9	23.1	564.1				
[B/A = %]	17	14	15	22	31	30	19	17	16	17	21	28	30	25	22	20	18	13	15	23	35	39	31	24	23				

<AL-13 Lubhu>	< Farm Population (3,448)		Economically Active Population Rate (67.2%)						Agriculture Labour Rate (48.7%)						Farm land area		130 ha Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.			Sep.		Oct.		Nov.		Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late				
A. Labour Force Available (1'000 man-days)	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	399.5			
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - III (50%) Remote - II (50%) >																												
Int.-III Remt.-II																													
1) Paddy (50%) (50%) 65ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.9	1.2	0.5	0.6	0.5	0.5	1.4	1.3	1.2	0.1	0.0	0.0	14.0		
2) Potato (25%) (0%) 16ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226
3) Early Potato -1 (25%) (0%) 16ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18
4) Early Potato -2 (0%) (0%) 16ha (monthly requirement : 1,000 man-days)	0.3	0.3	0.7	0.1	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	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.4	3.7
6) Late Potato (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5	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	226
7) Legumes (0%) (25%) 16ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25	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	4	9	12	147
8) Green Leaf Veg.-1 (0%) (0%) 0ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17	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	
9) Green Leaf Veg.-2 (25%) (0%) 16ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29	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	
10) Summer Veg. (50%) (50%) 65ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	13	30	34	40	41	43	36	33	26	22	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	327	
11) Winter Veg.-1 (50%) (0%) 33ha (monthly requirement : 1,000 man-days)	34	17	0.0	0.0	0.0	0.0	1.6	3.7	4.2	4.9	5.0	5.3	4.4	4.1	3.2	2.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.2	
12) Winter Veg.-2 (0%) (25%) 16ha (monthly requirement : 1,000 man-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	
13) Spices (0%) (25%) 16ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24	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	
Total Labour Use (Total area : 276ha)	3.2	2.6	2.5	3.2	3.5	2.9	1.7	2.0	2.2	2.6	3.4	4.5	4.9	4.0	3.6	3.4	3.0	2.4	2.5	3.4	5.4	6.6	5.3	4.1	82.9				
C. Balance [A - B]	10.5	11.1	11.2	10.6	10.2	10.8	12.0	11.8	11.5	11.1	10.3	9.2	8.9	9.7	10.1	10.3	10.7	11.3	11.3	10.3	8.4	7.2	8.4	9.6	246.6				
[B/A = %]	23	19	18	23	26	21	13	14	16	19	25	33	36	29	26	25	22	18	18	25	39	48	38	30	25				

<AL-19 Thika Bhatraw - I>	< Farm Population (11,530)		Economically Active Population Rate (70.3%)						Agriculture Labour Rate (36.6%)						Farm land area		497 ha Total												
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.			Sep.		Oct.		Nov.		Dec.					
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late				
A. Labour Force Available (1'000 man-days)	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	866.3			
B. Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - I (30%) Remote - I (70%) >																												
Int.-I Remt.-I																													
1) Paddy (50%) (50%) 249ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.6	3.9	2.2	0.9	1.1	1.0	1.0	2.6	2.5	2.2	0.1	0.0	0.0	216			
2) Potato (25%) (25%) 124ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5	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	14	31	36	226
3) Early Potato -1 (25%) (0%) 37ha (monthly requirement : 1,000 man-days)	17	44	41	5	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	31	46	24	18
4) Early Potato -2 (0%) (0%) 0ha (monthly requirement : 1,000 man-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	
6) Late Potato (25%) (0%) 37ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44																					

Table 6-1 Monthly Labour Balance under With Project Condition in Each Scheme (5/5)

A/20 Thika Bhiraw - II	Farm Population (3,655)				Economically Active Population Rate (72.2%)				Agriculture Labour Rate (40.6%)				Farm Land area 88 ha				Total									
	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.			Sep.		Oct.		Nov.		Dec.		
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		Early	Late	Early	Late	Early	Late	Early	Late	
A Labour Force Available (1'000 man-days)	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	312.8	
B Labour Requirement for Farming Activities	< Proposed rate of Basic Cropping Pattern : Intensive - I (50%) Remote - I (50%) >																									
1) Paddy (50% (50%) 44ha (monthly requirement : 1,000 man-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	216
2) Potato (25% (25%) 22ha (monthly requirement : 1,000 man-days)	24	11	11	11	42	41	5																			226
3) Early Potato -1 (25% (0%) 11ha (monthly requirement : 1,000 man-days)	17	44	41	5																						226
4) Early Potato -2 (0% (0%) 0ha (monthly requirement : 1,000 man-days)	18	17	44	41	5																					226
6) Late Potato (25% (0%) 11ha (monthly requirement : 1,000 man-days)	0.0	0.0	31	46	24	18	17	44	41	5																2.5
7) Legumes (0% (25%) 11ha (monthly requirement : 1,000 man-days)	8	8	6	6	28	29	25																			147
8) Green Leaf Veg. -1 (50% (0%) 22ha (monthly requirement : 1,000 man-days)	28	29	47	55	40	39	35	17																		325
9) Green Leaf Veg. -2 (0% (0%) 0ha (monthly requirement : 1,000 man-days)	45	33	38	63	59	29																				325
10) Summer Veg. (50% (50%) 44ha (monthly requirement : 1,000 man-days)	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.3	1.5	1.8	1.8	1.9	1.6	1.5	1.1	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4
11) Winter Veg. -1 (50% (0%) 22ha (monthly requirement : 1,000 man-days)	34	17													14	27	33	39	33	24	39	48	43	39		390
12) Winter Veg. -2 (0% (25%) 11ha (monthly requirement : 1,000 man-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	19	38	48	38	29	26	45	64	55	28		390
13) Spices (0% (25%) 11ha (monthly requirement : 1,000 man-days)	16	16	14	68	84	80	24								25	54	92	72	50	15						610
Total Labour Use (Total area : 209ha)	2.3	2.0	2.3	2.8	3.3	3.2	2.2	2.2	1.9	1.8	2.3	3.0	3.3	2.7	2.5	2.3	2.0	1.6	1.7	2.3	3.6	4.3	3.5	3.0		62.2
C Balance [A - B]	10.7	11.0	10.7	10.2	9.7	9.9	10.0	10.9	11.1	11.2	10.7	10.0	9.7	10.3	10.6	10.7	11.0	11.4	11.4	10.7	9.4	8.8	9.6	10.1		250.7
[B/A = %]	18	15	18	22	25	24	17	17	15	14	18	23	25	21	19	18	16	12	13	18	28	33	27	23		20

Table 6 - 2 Summary of Future Labour Balance in Each Scheme (1/2)

		(Unit: 1,000 man-days)																									
		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Total	
		Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late		
Katmandu District																											
AK-04 Bishwambhara (Farm Population : 1,232 Economic Active Population Rate : 80.0% Agriculture Labour Rate : 43.8% Farm land area : 92 ha)																											
A. Labour Force Available		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	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	136.1
B. Total Labour Use for Farming Activities		2.4	2.1	2.4	3.0	3.5	3.3	2.3	2.3	2.0	1.9	2.4	3.2	3.5	2.9	2.6	2.4	2.1	1.7	1.7	2.4	3.8	4.5	3.6	3.1		65.0
C. Balance [A - B]		2.8	3.2	1.9	2.3	1.8	2.0	3.0	3.0	3.3	3.4	2.8	2.1	1.8	2.4	2.7	2.9	3.1	3.6	3.5	2.8	1.5	0.8	1.6	2.1		61.0
[B/A = %]		47	40	46	56	66	63	43	43	39	36	46	60	66	54	49	46	41	32	33	46	72	85	69	59		52
AK-05 Boshan (Farm Population : 2,440 Economic Active Population Rate : 72.1% Agriculture Labour Rate : 46.5% Farm land area : 122 ha)																											
A. Labour Force Available		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	10.0	10.0	10.0	238.9
B. Total Labour Use for Farming Activities		2.5	2.1	2.3	3.4	4.6	4.5	2.8	2.5	2.4	2.5	3.2	4.2	4.6	3.8	3.3	3.1	2.7	2.0	2.2	3.4	5.2	5.9	4.7	3.6		81.7
C. Balance [A - B]		7.4	7.9	7.7	6.6	5.3	5.5	7.2	7.4	7.5	7.5	6.7	5.7	5.4	6.2	6.6	6.9	7.2	7.9	7.7	6.5	4.7	4.0	5.2	6.4		157.1
[B/A = %]		25	21	23	34	46	45	28	26	25	25	32	42	46	38	34	31	27	20	23	34	53	59	47	36		34
AK-07 Dakshinkali (Farm Population : 1,412 Economic Active Population Rate : 73.7% Agriculture Labour Rate : 63.2% Farm land area : 67 ha)																											
A. Labour Force Available		7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	189.4
B. Total Labour Use for Farming Activities		1.8	1.5	1.7	2.2	2.5	2.4	1.7	1.7	1.5	1.4	1.8	2.3	2.5	2.1	1.9	1.7	1.6	1.2	1.3	1.8	2.8	3.2	2.6	2.3		47.3
C. Balance [A - B]		6.1	6.4	6.2	5.7	5.4	5.5	6.2	6.2	6.4	6.5	6.1	5.6	5.4	5.8	6.0	6.2	6.3	6.7	6.6	6.1	5.1	4.7	5.3	5.6		142.1
[B/A = %]		23	19	21	27	32	30	21	21	19	18	22	29	32	26	24	22	20	16	16	22	35	41	33	29		25
AK-14 Intryasi (Farm Population : 1,611 Economic Active Population Rate : 71.1% Agriculture Labour Rate : 61.9% Farm land area : 101 ha)																											
A. Labour Force Available		8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	207.0
B. Total Labour Use for Farming Activities		2.7	2.3	2.6	3.2	3.8	3.6	2.5	2.5	2.2	2.1	2.7	3.5	3.8	3.1	2.8	2.6	2.3	1.9	1.9	2.7	4.2	4.9	4.0	3.4		71.4
C. Balance [A - B]		5.9	6.3	6.0	5.4	4.8	5.0	6.1	6.1	6.4	6.5	5.9	5.1	4.8	5.5	5.8	6.0	6.3	6.8	6.7	5.9	4.5	3.7	4.6	5.2		135.7
[B/A = %]		31	27	30	38	44	42	29	29	26	24	31	40	44	36	33	30	27	22	22	31	48	57	46	40		34
AK-25 Shall Nadi (Farm Population : 3,789 Economic Active Population Rate : 67.5% Agriculture Labour Rate : 50.4% Farm land area : 157 ha)																											
A. Labour Force Available		15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	375.5
B. Total Labour Use for Farming Activities		5.1	4.5	5.2	5.7	5.8	5.5	4.2	4.5	3.8	3.3	4.2	5.4	5.9	4.9	4.4	4.2	3.8	3.2	3.1	3.9	6.2	7.6	6.3	6.0		116.7
C. Balance [A - B]		10.5	11.2	10.4	9.9	9.8	10.1	11.5	11.1	11.9	12.4	11.5	10.2	9.8	10.8	11.2	11.4	11.9	12.4	12.6	11.7	9.4	8.1	9.3	9.6		258.8
[B/A = %]		33	28	33	37	37	35	27	29	24	21	27	35	38	31	28	27	24	21	20	25	40	48	40	38		31
Sub-Total																											
A. Labour Force Available		47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	1338.0
B. Total Labour Use for Farming Activities		14.6	12.5	14.3	17.5	20.2	19.3	13.4	13.5	12.0	11.1	14.3	18.6	20.2	16.7	15.0	14.0	12.6	10.0	10.3	14.2	23.2	26.1	21.2	18.4		382.2
C. Balance [A - B]		32.9	35.0	33.1	30.0	27.2	28.1	34.0	33.9	35.4	36.3	33.1	28.8	27.3	30.7	32.4	33.4	34.9	37.4	37.3	33.2	25.2	21.3	26.2	29.0		755.9
[B/A = %]		31	26	30	37	43	41	28	28	25	23	30	39	43	35	32	30	26	21	22	30	47	55	45	39		34
Bhaktapur District																											
AB-02 Bidol (Farm Population : 1,011 Economic Active Population Rate : 65.0% Agriculture Labour Rate : 60.7% Farm land area : 32 ha)																											
A. Labour Force Available		4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	116.5
B. Total Labour Use for Farming Activities		0.7	0.5	0.6	0.9	1.2	1.3	0.7	0.7	0.6	0.7	0.8	1.1	1.2	1.0	0.9	0.8	0.7	0.5	0.6	0.9	1.4	1.6	1.2	0.9		21.4
C. Balance [A - B]		4.2	4.3	4.3	4.0	3.6	3.7	4.1	4.2	4.2	4.2	4.0	3.7	3.7	3.9	4.0	4.0	4.1	4.3	4.3	4.0	3.5	3.3	3.6	3.9		95.0
[B/A = %]		14	11	12	18	25	24	15	14	13	13	17	23	25	20	18	17	15	11	12	19	28	32	25	19		18
AB-10 Katunje (Farm Population : 967 Economic Active Population Rate : 62.5% Agriculture Labour Rate : 54.1% Farm land area : 40 ha)																											
A. Labour Force Available		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	95.5
B. Total Labour Use for Farming Activities		1.0	0.8	0.8	1.0	1.1	0.9	0.5	0.6	0.7	0.8	1.1	1.4	1.5	1.2	1.1	1.0	0.9	0.7	0.8	1.1	1.7	2.0	1.6	1.3		25.5
C. Balance [A - B]		3.0	3.2	3.2	3.0	2.9	3.1	3.4	3.4	3.3	3.2	2.9	2.6	2.5	2.7	2.9	2.9	3.0	3.2	3.2	2.9	2.3	2.0	2.4	2.7		70.0
[B/A = %]		25	20	19	24	27	22	13	15	17	20	27	35	38	31	28	26	23	19	19	27	41	51	41	32		27
AB-12 Kutudhal (Farm Population : 803 Economic Active Population Rate : 67.0% Agriculture Labour Rate : 45.6% Farm land area : 43 ha)																											
A. Labour Force Available		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	71.6
B. Total Labour Use for Farming Activities		0.8	0.7	0.8	1.1	1.2	1.0	0.7	0.6	0.7	0.9	1.1	1.5	1.6	1.3	1.2	1.1	1.0	0.7	0.8	1.2	1.8	2.2	1.8	1.2		27.0
C. Balance [A - B]		2.2	2.3	2.2	1.9	1.8	1.9	2.3	2.3	2.3	2.1	1.8	1.5	1.4	1.7	1.8	1.9	2.0	2.3	2.2	1.8	1.1	0.8	1.2	1.8		44.6
[B/A = %]		27	24	26	38	40	35	22	22	24	29	38	50	54	45	40	36	32	24	27	40	62	74	59	39		38
AB-14 Mahadev Khola (Farm Population : 2,585 Economic Active Population Rate : 75.4% Agriculture Labour Rate : 65.9% Farm land area : 112 ha)																											
A. Labour Force Available		15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	375.1
B. Total Labour Use for Farming Activities		2.1	1.8	2.0	2.9	3.1	2.7	1.7	1.7	1.9	2.2	3.0	3.9	4.2	3.5	3.1	2.8	2.5	1.8	2.1	3.1	4.8	5.8	4.6	3.0		70.4
C. Balance [A - B]		13.5	13.8	13.6	12.7	12.5	12.9	13.9	13.9	13.7	13.4	12.7	11.8	11.4	12.2	12.6	12.8	13.1	13.8	13.6	12.5	10.8	9.9	11.0	12.6		304.7
[B/A = %]		14	12	13	19	20	17	11	11	12	14	19	25	27	22	20	18	16	12	13	20	31	37	29	19		19
Sub-Total																											
A. Labour Force Available		27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	658.6
B. Total Labour Use for Farming Activities		4.6	3.9	4.1	5.9	6.7	5.8	3.7	3.6	4.0	4.6	6.0	7.8	8.5	7.0	6.2	5.8	5.1	3.8	4.2	6.3	9.7	11.6	9.2	6.4		144.4
C. Balance [A - B]		22.9	23.5	23.3	21.5	20.8	21.6	23.8	23.9	23.5	23.9	21.4	19.6	18.9	20.4	21.2	21.7	22.3	23.6	23.2	21.1	17.8	15.9	18.2	21.1		514.3
[B/A = %]		17	14	15	21	24	21	13	13	14	17	22	29	31	26	23	21	19	14	15	23	35	42	34	23		22

(Continued)

Table 6 - 3 Planted Area and Cropping Intensity with Project Condition

No. of Scheme / Name	Net Farm Land Area (ha)					Planted Area by Crops (ha)								Total Area		
	Total Area	Intensive			Remote		Paddy	Potatoes	Early Potatoes	Late Potatoes	Legumes	Summer Vege.	Winter Vege.		Green Leaf Veg.	Bulb crop
		I	II	III	I	II										
Kathmandu District																
AK - 04 Biswambhara	92	46			46	46	23	12	12	12	46	35	23	12	219	
AK - 05 Boshan	122	37			85	61	31	9	9	21	61	40	18	21	271	
AK - 07 Dakshinkali	67	34			34	34	17	8	8	8	34	25	17	8	159	
AK - 14 Indrayani	101	51			51	51	25	13	13	13	51	38	25	13	240	
AK - 25 Shali Nadi	157	110			47	79	39	20	20	20	79	67	55	12	389	
Sub-total	539	277			263	270	135	61	61	73	270	204	138	66	1,278	
Bhaktapur District																
AB - 02 Bidol	32	10			22	16	8	2	2	6	16	10	5	6	71	
AB - 10 Katunje	40		20		20	20	5	10	0	5	20	15	5	5	85	
AB - 12 Kutudhal	43		13		30	22	3	11	0	8	22	14	3	8	89	
AB - 14 Mahadev Khola	112		34		78	56	8	28	0	20	56	36	8	20	232	
Sub-total	227	10	67	22	129	114	25	51	2	38	114	76	21	38	478	
Lalitpur District																
AL - 10 Kotkhu	246	74			172	123	62	18	18	43	123	80	37	43	547	
AL - 13 Lubhu	130		65		65	65	16	33	0	16	65	49	16	16	276	
AL - 19 Thika Bhairaw-(I)	497	149			348	249	124	37	37	87	249	162	75	87	1,106	
AL - 20 Thika Bhairaw-(II)	88	44			44	44	22	11	11	11	44	33	22	11	209	
Sub-total	961	267	65	564	65	481	224	99	67	157	481	323	150	157	2,138	
Total	1,727	553	0	132	849	194	864	383	212	130	268	864	603	309	3,894	

< Cropping Intensity >

	Rate of Each Pattern (%)					Cropping Intensity by Crops (%)								Total	
	Intensive			Remote		Paddy	Potatoes	Early Potatoes	Late Potatoes	Legumes	Summer Vege.	Winter Vege.	Green Leaf Veg.		Bulb crop
	I	II	III	I	II										
Kathmandu District															
AK - 04 Biswambhara	50.0			50.0		50.0	25.0	12.5	12.5	12.5	50.0	37.5	25.0	12.5	237.5
AK - 05 Boshan	30.0			70.0		50.0	25.0	7.5	7.5	17.5	50.0	32.5	15.0	17.5	222.5
AK - 07 Dakshinkali	50.0			50.0		50.0	25.0	12.5	12.5	12.5	50.0	37.5	25.0	12.5	237.5
AK - 14 Indrayani	50.0			50.0		50.0	25.0	12.5	12.5	12.5	50.0	37.5	25.0	12.5	237.5
AK - 25 Shali Nadi	70.0			30.0		50.0	25.0	12.5	12.5	12.5	50.0	42.5	35.0	7.5	247.5
Sub-Average	51.3			48.7		50.0	25.0	11.4	11.4	13.6	50.0	37.8	25.6	12.2	237.0
Bhaktapur District															
AB - 02 Bidol	30.0			70.0		50.0	25.0	7.5	7.5	17.5	50.0	32.5	15.0	17.5	222.5
AB - 10 Katunje		50.0		50.0		50.0	12.5	25.0	0.0	12.5	50.0	37.5	12.5	12.5	212.5
AB - 12 Kutudhal		30.0		70.0		50.0	7.5	25.0	0.0	17.5	50.0	32.5	7.5	17.5	207.5
AB - 14 Mahadev Khola		30.0		70.0		50.0	7.5	25.0	0.0	17.5	50.0	32.5	7.5	17.5	207.5
Sub-Average	4.2	29.3	9.9	56.6		50.0	10.8	22.5	1.1	16.6	50.0	33.4	9.4	16.6	210.5
Lalitpur District															
AL - 10 Kotkhu	30.0			70.0		50.0	25.0	7.5	7.5	17.5	50.0	32.5	15.0	17.5	222.5
AL - 13 Lubhu		50.0		50.0		50.0	12.5	25.0	0.0	12.5	50.0	37.5	12.5	12.5	212.5
AL - 19 Thika Bhairaw-(I)	30.0			70.0		50.0	25.0	7.5	7.5	17.5	50.0	32.5	15.0	17.5	222.5
AL - 20 Thika Bhairaw-(II)	50.0			50.0		50.0	25.0	12.5	12.5	12.5	50.0	37.5	25.0	12.5	237.5
Sub-Average	27.8	6.8	58.7	6.8		50.0	23.3	10.3	6.9	16.4	50.0	33.6	15.6	16.4	222.5
Average	32.0	0.0	7.6	49.2	11.2	50.0	22.2	12.3	7.6	15.5	50.0	34.9	17.9	15.1	225.5

Table 6 - 4 Planted Area under Without and With Project Condition

<Without Project Condition>																(Unit : ha)
Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potato	Early Potato	Late Potato	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Cropping Intensity (%)
Kathmandu District																
AK - 04 Biswambhara	92	83	68	9	9	11	0	0	0	0					180	196.0
AK - 05 Boshan	122	122	71	0	34	12	0	0	0	0					239	196.0
AK - 07 Dakshinkali	67	67	15	0	23	2	0	0	0	25					132	197.0
AK - 14 Indrayani	101	99	79	2	2	18	0	0	0	0					200	198.0
AK - 25 Shali Nadi	157	157	79	0	8	38	22	22	0	0					325	207.0
Sub-total	539	528	311	11	77	81	22	22	0	25					1,076	199.7
Bhaktapur District																
AB - 02 Bidol	32	32	26	0	0	3	0	0	0	0					61	190.0
AB - 10 Katunje	40	38	30	2	2	6	0	0	0	0					78	195.0
AB - 12 Kutudhal	43	43	34	0	1	6	0	0	0	0					84	195.0
AB - 14 Mahadev Khola	112	110	90	2	6	6	0	0	3	0					216	193.0
Sub-total	227	223	179	4	9	20	0	0	3	0					439	193.3
Lalitpur District																
AL - 10 Kotkhu	246	226	162	15	30	30	0	0	0	0					463	188.0
AL - 13 Labhu	130	121	85	7	7	7	0	0	20	0					244	188.0
AL - 19 Thika Bhairaw-(I)	497	432	373	55	40	45	0	0	15	0					959	193.0
AL - 20 Thika Bhairaw-(II)	88	86	75	0	2	3	0	0	2	0					167	190.0
Sub-total	961	866	694	76	78	83	0	0	36	0					1,833	190.8
Total	1,727	1,616	1,184	91	163	185	22	22	40	25					3,349	191.9
<With Project Condition>																
Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potato	Early Potato	Late Potato	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Cropping Intensity (%)
Kathmandu District																
AK - 04 Biswambhara	92	46				23	12	12	12		46	35	23	12	219	237.5
AK - 05 Boshan	122	61				31	9	9	21		61	40	18	21	271	222.5
AK - 07 Dakshinkali	67	34				17	8	8	8		34	25	17	8	159	237.5
AK - 14 Indrayani	101	51				25	13	13	13		51	38	25	13	240	237.5
AK - 25 Shali Nadi	157	79				39	20	20	20		79	67	55	12	389	247.5
Sub-total	539	270				135	61	61	73		270	204	138	66	1,278	237.0
Bhaktapur District																
AB - 02 Bidol	32	16				8	2	2	6		16	10	5	6	71	222.5
AB - 10 Katunje	40	20				5	10	0	5		20	15	5	5	85	212.5
AB - 12 Kutudhal	43	22				3	11	0	8		22	14	3	8	89	207.5
AB - 14 Mahadev Khola	112	56				8	28	0	20		56	36	8	20	332	207.5
Sub-total	227	114				25	51	2	38		114	76	21	38	478	210.5
Lalitpur District																
AL - 10 Kotkhu	246	123				62	18	18	43		123	80	37	43	547	222.5
AL - 13 Labhu	130	65				16	33	0	16		65	49	16	16	276	212.5
AL - 19 Thika Bhairaw-(I)	497	249				124	37	37	87		249	162	75	87	1,106	222.5
AL - 20 Thika Bhairaw-(II)	88	44				22	11	11	11		44	33	22	11	209	237.5
Sub-total	961	481				224	99	67	157		481	323	150	157	2,138	222.5
Total	1,727	864				383	212	130	268		864	603	309	261	3,894	225.5
<Balance>																
Crops		Paddy	Wheat	Maize	Mustard	Potato	Early Potato	Late Potato	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Intensity (%)
Kathmandu District																
AK - 04 Biswambhara		-37	-68	-9	-9	12	12	12	12	0	46	35	23	12	38	-41.5
AK - 05 Boshan		-61	-71	0	-34	18	9	9	21	0	61	40	18	21	32	26.5
AK - 07 Dakshinkali		-34	-15	0	-23	15	8	8	8	-25	34	25	17	8	27	-40.5
AK - 14 Indrayani		-48	-79	-2	-2	7	13	13	13	0	51	38	25	13	40	39.5
AK - 25 Shali Nadi		-79	-79	0	-8	2	-2	-2	20	0	79	67	55	12	64	-40.5
Sub-total		-258	-311	-11	-77	54	39	39	73	-25	270	204	138	66	201	37.3
Bhaktapur District																
AB - 02 Bidol		-16	-26	0	0	5	2	2	6	0	16	10	5	6	10	32.5
AB - 10 Katunje		-18	-30	-2	-2	-1	10	0	5	0	20	15	5	5	7	17.5
AB - 12 Kutudhal		-22	-34	0	-1	-2	11	0	8	0	22	14	3	8	5	12.5
AB - 14 Mahadev Khola		-54	-90	-2	-6	3	28	0	16	0	56	36	8	20	16	14.5
Sub-total		-109	-179	-4	-9	4	51	2	34	0	114	76	21	38	39	17.2
Lalitpur District																
AL - 10 Kotkhu		-103	-162	-15	-30	32	18	18	43	0	123	80	37	43	85	34.5
AL - 13 Labhu		-56	-85	-7	-7	10	33	0	-3	0	65	49	16	16	32	24.5
AL - 19 Thika Bhairaw-(I)		-184	-373	-55	-40	80	37	37	72	0	249	162	75	87	147	29.5
AL - 20 Thika Bhairaw-(II)		-42	-75	0	-2	19	11	11	9	0	44	33	22	11	12	-47.5
Sub-total		-385	-694	-76	-78	141	99	67	121	0	481	323	150	157	305	31.8
Total		-783	-1,184	-91	-163	198	190	108	229	-25	864	603	309	261	545	31.6
Potato Total :							497	Legume :			264	Vegetable Total :				2,836

Table 6 - 5 Summary of Recommended Farming Practices

Crops	Planting Time	Seed rate Kg/ha	Spacing Row x Plant (cm)	Organic matter (ton)	Irrigation Number (Total/mm)	Fertilizer NPK (Kg/ha)	Chemicals		Labour *** (man/days)	Harvesting	Yield (ton/ha)	
							Pesticide *	Fungicide **			Main -product	BY -product
Paddy	June - July	45-50	20 x 20	5-7	Continuous (1250mm)	100:30:30	Se, Su, Mx, Me, F, Cf	D78, Hi, Ce, Am	216	Oct - Nov	5.0 - 7.7	4.9 - 5.5
Potato	Dec. - Jan.	1000	70 x 25	15-20	4 - 5 (500-700mm)	150:60:350	Ma, Se, A	D45, Ag, Lo, F	226	March - April		
Legumes												
Broad bean	Nov.-Dec.	20-100	45-120 x 5-20	20	2 (530mm)	40:40:40	Ma, Mx	Ce, Th, D45, B, Ag, Su,	147	Mar. - Apr.	0.6-1.5 (grain)	4-16 (pod)
Garden pea	Nov.-Dec.	60-140	30-65 x 3-7	20	2 (530mm)	40:40:40	Ma, Mx	Ce, Th, D45, B, Ag, Su,	70	Mar. - Apr.	1.5 - 2.5 (grain)	4-16 (pod)
Vegetables												
Cauli flower	Aug - Nov	0.7	60 x 45-60	20-30	(300mm)	100:60:50	Me, Se	D45, D78, Ca, Th, F, Ag, Ce, Am, Ba	390	Dec - Mar	20 - 30	
Cabbage	Aug - Nov	0.6	60 x 45	20-24	(300mm)	100:60:50	Me, Se	D45, D78, Ca, Th, F, Ag, Ce, Am, Ba	350	Dec - Mar	14 - 20	
Radish	Sep - Oct	50	30 x 10	20	(300mm)	50:40:40	Se, Ma, F, Mx	B, Th	320	Dec - Feb	25 - 30	
Turnip	Aug - Sep	4	30 x 20	16-20	(300mm)	50:40:40	Se, Ma, F, Mx	B, Th	320	Oct - Nov	10 - 15	
Carrot	Nov - Dec	5-6	45 x 10	20	(300mm)	60:40:40	Se, Ma, F, Mx	B, Th	320	Nov - Apr	18 - 20	
Broad-leaf mustard	Oct - Jan	6	30 x 10-15	20	N.A.	100:40:40		D78, BI	325	Dec - Apr	20 - 30	
Garden Cress	Oct - Feb	10	20-30 x 2-3	20	N.A.	60:40:40		D78, BI	325	Dec - Mar	6 - 10	
Spinach	Sep - Dec	10	30 x 5-7	20	N.A.	60:40:40		D78, BI	325	Nov - Feb	16 - 20	
Swiss chard	Aug - Dec	10	30 x 20	20	N.A.	60:40:40		D78, BI	325	Oct - Mar	20 - 30	
Onion	Sep - Nov	8-10	15 x 10	20-30	(460mm)	60:40:50	Ma	D45, Ca, Th, Di, BI	610	Mar - May	20 - 30	
Garlic	Sep - Dec	500-600	15 x 5-10	20-30	(360mm)	60:40:50	Ma	D45, Ca, Th, Di, BI	610	Feb - May	10 - 12	
Tomato	Feb - Apr	0.4-0.5	60-75 x 45-60	20	(460mm)	100:40:40	Se, Ma, F	Ag, Ca, Th, Di, D45, D78	327	May - August	20 - 30	
Brijjal	Feb - Apr	0.5-0.6	60 x 75	20	(480mm)	60:40:40	Se, Ma	B, D45	475	Apr - Aug	30 - 40	
Sweet pepper	Jan - Apr	1.0-1.5	60 x 45	24-30	(580mm)	80:60:60	Se, Ma, D, Mx	D45, BI, Ca	327	Apr - Aug	10 - 16	
Chili	Feb - Apr	1.0-1.2	45-60 x 30-45	20	(580mm)	60:40:40	Se, Ma, D, Mx	D45, BI, Ca	310	Apr - Aug	2-4 (dry)	5-10 (fresh)
Lady's finger	Mar - May	15	60 x 15	20	(300mm)	60:40:40	Ma, Se, Mx, D		472	May - Aug	15 - 20	
Cucumber	Mar - May	2.5	120-150 x 50	20-30	(300mm)	60:40:40	Ma, Se	Su, Th, D45, D78, Di, BI	310	Apr - Aug	12 - 14	
Bitter gourd	Feb - May	4	120-150 x 50-75	20-30	N.A.	80:40:40	Ma, Se	Su, Th, D45, D78, Di, BI	310	Apr - Aug	10 - 20	
French bean	Feb - Apr	20-100	45-120 x 5-20	20	N.A.	40:40:40	Ma, Mx	Ce, Th, D45, B, Ag, Su,	220	Apr - Aug	0.6-1.4	
Cow pea	Mar - May	60-140	30-65 x 3-7	20	2 (530mm)	40:40:40	Ma, Mx	Ce, Th, D45, B, Ag, Su,	220	July - Oct	1.5 - 3.0	

Remarks : * Insecti. & Pesticides : Se = Sevin, Su = Sumithion, Mx = Metesystox, Me = Metacid, F = Folithion, Cf = Carbo Fenthion, E/F = Bndrin or Furadan
A = Aldrin, D = Dimecron, H = Heptachlor, Cr = Chlordane, Ma = Malathion
** Fungicides : D78 = Dithane - Z78, D45 = Dithane - 45, Hi = Hinosan, Ce = Ceresan, Vi = Vitavax 200, Ca = Captan, Ap = Apron 35, Th = Thiram
Am = Agrimycine, Ag = Agrol, Lo = Lonacol, F = Fytolan, B = Bordesux, Su = Sulfer, Zi = Ziram, BI = Blitox, Ba = Bavistin, Di = Difolaton
*** Labour : Average of Hilly Area by source (2) or Results of farm survey by JICA Study Team

Source : (1) Trainer's manual, Manpower Development Agriculture Project, DoA
Rice (1992), Wheat (1988), Maize (1989), Potato (1992), Oilseeds (1990), Grain Legumes (1990), Vegetables (1988), Irrigation (1991)
(2) Report on Cost Production for Major Crops in Nepal 1991/92, Economic Analysis Division, DoA, MoA, 1992
(3) Norms and Normatives for Planning in Agriculture Sector Vol. 1, APROSC, 1990
(4) Kitchen Garden Table, VDD, MoA

Table 6 - 6 Recommended Varieties of Vegetables

Crop	Variety	Season	Ecological Region	Remarks
Cole Crops				
Cauliflower	Kathmandu	Middle	Plain - H. hill	Released in 1988
	Snowball	Middle	Plain - M. hill	
	Pusa Deepali	Early	Plain - M. hill	
	Kibo Giant	Late	M. hill	
Cabbage	Copenhagen Market	Middle	Plain - M. hill	
	Pride of India	Early	Plain - M. hill	
	Late Large Drum Head	Late	M. hill - H. hill	
Root Crop				
Radish	Mino Early	Early - Mid.	Plain - H. hill	Released in 1988
	White Neck	Mid. - Late	Plain - H. hill	
	Pyuthane Red	Mid. - Late	Plain - H. hill	
	40 days	Early	Plain - M. hill	
	Tokinashi	All	M. hill	
Carrot	Nantees	Middle	Plain - H. hill	Released in 1988
	New Kuroda	Middle	M. hill	
Turnip	Purple Top		Plain - H. hill	Released in 1988
Fruits Crop				
Tomato	Pusa Ruby	Early	Plain - H. hill	Released in 1988
	Monprecos	Spring	Plain - H. hill	
	Chines	Late	M. hill	
	Roma	Early - Mid.	M. hill	
	Pusa Early Dwarf	Early	Plain - M. hill	
	Cold set	Middle	M. hill - H. hill	
	CL-1131	Middle	Plain - M. hill	
Brinjal	Pusa Purple long	Middle	Plain - M. hill	
	Nurki	Middle	Plain - M. hill	
	Pusa Kranti	Middle	Plain - M. hill	
	Sariahi green	Late	Plain - M. hill	
Sweet pepper	California wonder	Middle	Plain - M. hill	
Chilli	Pusa Jwala	Middle	Plain - M. hill	
	NP 46	Middle	Plain - M. hill	
	Kathmandu	Middle	Plain - M. hill	
Lady's finger	Pusa Sawani	Middle	Plain - M. hill	
Leaf Crop				
Broad leaf mustard	Khumal broad leaf	Late	M. hill	Released in 1988
	Marpha broad leaf	Middle	M. hill	
Spinach	Patane	Middle	M. hill	
Cress	Kathmandu	Middle	M. hill	
Fenugreek	Kasuri	Middle	M. hill	
Bulb Crop				
Onion	Red Creole	Middle	Plain - H. hill	Released in 1988
	Nuwakote	Early	M. hill	
	Jight Red	off-season	Plain - M. hill	
	Dark Red	Middle	Plain - M. hill	
Leguminous Crop				
Garden Pea	New Line Perfection	Late	Plain - H. hill	
	Arkel	Early	Plain - H. hill	
	Sikkim	Rainy	Plain - H. hill	
	Bonneville	Middle	Plain - H. hill	
French bean	Contender	Middle	Plain - H. hill	
	Kentucky Wonder	Middle	Plain - H. hill	
Asparagus bean	Khumal Red	Middle	Plain - M. hill	
	Sariahi Black	Mid. - Late	Plain - M. hill	
Cucurbit Crop				
Cucumber	Kusume	Early	Plain - M. hill	
	Local	Middle	Plain - M. hill	
	Pointset	Early	Plain - M. hill	
Summer squash	Black Beauty	Middle	M. hill	
	Gray Zucchini	Middle	M. hill	
Bitter gourd	PDM	Middle	Plain - M. hill	
	Com. Long	Middle	Plain - M. hill	
Bottle gourd	PSPL	Middle	Plain - M. hill	
Sponge gourd	Pusa Chillo	Middle	Plain - M. hill	
	Pokhara	Middle	Plain - M. hill	
	Kathmandu Long	Middle	Plain - M. hill	

Resources : Proceeding of the Regional Workshop on Vegetable Seed Production , 1992

Table 6 - 7 Anticipated Unit Yield With Project Condition

	Present Unit Yield in the Project area *	Trainers Manual Experimental Yield **	Farm Survey Result ***	Anticipated Yield With Project Condition
Paddy	4.23	4.3 - 7.3	5.2	5.2
		7.3 Taichung-176		
		7.3 Chainung-242		
		4.3 Masuli		
		5.6 Khumal-2		
		6.3 Khumal-4		
Potato	10.02	30.0 - 32.0	13.2	13.0
		30.0 Cardinal (red)		
		32.0 Kufri Jyoti (white)		
Broad bean	1.36	1.0 - 1.5	1.5	1.5
Vegetables				
Cauliflower		10.0 - 30.0	15.9	16.0
		20.0 - 30.0 M		
		20.0 - 24.0 L		
		10.0 - 14.0 E		
Cabbage		16.0 - 30.0	19.1	19.0
		20.0 - 24.0 M		
		24.0 - 30.0 L		
		16.0 - 20.0 E		
Radish		20.0 - 50.0	23.8	24.0
		40.0 - 50.0 E - M		
		32.0 - 34.0 M - L		
		20.0 - 24.0 E		
Carrot		12.0 - 14.0	10.4	10.0
Tomato		20.0 - 30.0	12.0	12.0
Brinjal		30.0 - 40.0	20.0	20.0
Sweetpepper		10.0 - 16.0	10.5	11.0
Chilli		8.0 - 16.0	7.1	7.0
Broad leaf mustard		30.0 - 40.0	19.6	20.0
Spinach		16.0 - 20.0	12.0	12.0
Cress		6.0 - 10.0	8.0	8.0
Onion		20.0 - 30.0	18.3	18.0
Garlic		10.0 - 12.0	9.3	9.0
Pea		5.0 - 10.0	2.7	3.0
French bean		10.0 - 16.0	3.6	4.0
Cucumber		12.0 - 14.0	9.7	10.0
Summer squash		10.0 - 20.0	11.0	11.0

Source : * Farm Survey, JICA Study Team, 1994
 ** Trainer's Manual of Vegetables, Paddy, Potato, Legumes, DoA, 1988
 *** Paddy, Potato, Legume : Farm Survey Result of Full Irrigation area in the Project areas
 Vegetables : Farm Survey Result of Vegetable Pocket area in Kathmandu Valley

Remarks : VE (very early season), E (early season), M (middle season), L (late season)

Table 6 - 8 Unit Yield and Production under Without and With Project Condition

<Without Project Condition>													
Crops	Paddy	Wheat	Maize	Mustard	Potato	Early Potato	Late Potato	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop
Unit Yield (kg/ha)	4,230	1,990	1,460	600	10,020	8,500	8,500	1,360	820	-	-	-	-
Kathmandu District													
AK - 04 Biswambham	298	75	12	7	88	0	0	0	0				
AK - 05 Boshan	512	134	0	28	140	0	0	0	20				
AK - 07 Dakshinkali	255	31	0	17	17	0	0	0	0				
AK - 14 Indrayani	376	110	3	1	195	0	0	0	0				
AK - 25 Shali Nadi	628	110	0	4	535	187	187	0	0				
Sub-total	2048	491	15	49	854	187	187	0	0				
Bhaktapur District													
AB - 02 Bidol	131	44	0	0	33	0	0	0	0				
AB - 10 Katunje	171	62	3	1	63	0	0	0	0				
AB - 12 Kutudhal	176	76	0	0	64	0	0	0	0				
AB - 14 Mahadev Khola	461	215	3	2	65	0	0	4	0				
Sub-total	941	376	6	4	223	0	0	4	0				
Lalitpur District													
AL - 10 Kotkhu	951	276	21	15	275	0	0	0	0				
AL - 13 Lubhu	556	194	10	3	59	0	0	29	0				
AL - 19 Thika Bhairaw-(I)	1989	783	80	29	420	0	0	23	0				
AL - 20 Thika Bhairaw-(II)	379	180	0	1	25	0	0	2	0				
Sub-total	3853	1476	112	46	776	0	0	50	0				
Total	6842	2343	133	99	1853	187	187	54	20				
<With Project Condition>													
Crops	Paddy	Wheat	Maize	Mustard	Potato	Early Potato	Late Potato	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop
Unit Yield (kg/ha)	5,200	-	-	-	13,000	11,000	11,000	1,500	-	12,000	16,000	20,000	18,000
Kathmandu District													
AK - 04 Biswambham	239				299	127	127	17		552	552	460	207
AK - 05 Boshan	317				397	101	101	32		732	634	366	384
AK - 07 Dakshinkali	174				218	92	92	13		402	402	335	151
AK - 14 Indrayani	263				328	139	139	19		606	606	505	227
AK - 25 Shali Nadi	408				510	216	216	29		942	1,068	1,099	212
Sub-total	1,401				1,752	674	674	110		3,234	3,262	2,765	1,181
Bhaktapur District													
AB - 02 Bidol	83				104	26	26	8		192	166	96	101
AB - 10 Katunje	104				65	110	0	6 *		240	240	100	62 *
AB - 12 Kutudhal	112				42	118	0	7 #		258	224	65	68 #
AB - 14 Mahadev Khola	291				109	308	0	25 "		672	582	168	274 "
Sub-total	590				320	563	26	46		1,362	1,212	429	505
Lalitpur District													
AL - 10 Kotkhu	640				800	203	203	65		1,476	1,279	738	775
AL - 13 Lubhu	338				211	358	0	24		780	780	325	293
AL - 19 Thika Bhairaw-(I)	1,292				1,615	410	410	130		2,982	2,584	1,491	1,566
AL - 20 Thika Bhairaw-(II)	229				286	121	121	17		528	528	440	198
Sub-total	2,499				2,912	1,091	734	236		5,766	5,172	2,994	2,831
Total	4,490				4,984	2,328	1,434	393		10,362	9,646	6,188	4,517
<Total Balance>													
Total	-2,352	-2,343	-133	-99	3,131	2,141	1,247	339	-20	10,362	9,646	6,188	4,517
							Potato Total :	6,519	Legume :	319		Vegetable Total :	30,713

Remarks : * ; Due to the limitation of irrigable area in dry season, Yield is reduced in the 58% of total planted area.
 # ; Due to the limitation of irrigable area in dry season, Yield is reduced in the whole planted area.
 " ; Due to the limitation of irrigable area in dry season, Yield is reduced in the 47% of total planted area.

Table 6 - 9 Financial Cost and Return under Without and With Project Condition (1/2)

Description	Without Project Condition																									
	Paddy			Wheat			Potato			E.L. Potato			Mungard			Legumes (Broad bean)			Legumes (Garden Pea)			Maize				
Crop (ha)	Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)				
A) Output																										
a) Production	Kg	4,230	8.50	35,960	1,990	8.00	15,920	10,020	7.00	70,140	8,500	7.00	59,500	600	16.00	9,600	1,360	12.00	16,320	815	16.00	13,040	1,460	7.50	10,950	
b) By-product	Kg	4,145	0.80	3,320	1,910	0.25	480	0	0.00	0	0	0.00	0	660	0.80	530	0	0.00	0	0	0.00	0	1,572	0.25	390	
Gross Income	NRs			39,280			16,400			70,140			59,500			10,130			16,320			13,040			11,290	
B) Input																										
a) Seed	Kg	50	16.80	840	139	12.00	1,670	695	16.80	11,680	695	16.80	11,680	17	18.00	310	39	12.00	470	15	25.00	380	23	10.00	230	
b) Fertilizer																										
Complex	Kg	211	10.20	2,150	160	10.20	1,630	207	10.20	2,110	207	10.20	2,110	16	10.20	166	127	10.20	1,300	80	10.20	820	84	10.20	860	
Urea	Kg	151	5.72	869	133	5.72	769	157	5.72	900	157	5.72	900	74	5.72	420	0	5.72	0	0	5.72	0	0	87	5.72	500
Polish	Kg	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	0	8.50	0
Mixture	Kg	2,951	0.50	1,480	1,926	0.50	960	5,295	0.50	2,650	5,295	0.50	2,650	611	0.50	310	1,114	0.50	560	202	0.50	100	2,674	0.50	1,340	
c) Agro-chemical	Kg	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	0	450.00	0
Sub-total (a to c)				5,390			5,020			17,340			17,340			1,200			2,330			1,300			2,990	
d) Labour Requirement																										
Family Labour																										
-Male	M/D	65	0.00	0	41	0.00	0	71	0.00	0	71	0.00	0	34	0.00	0	59	0.00	0	30	0.00	0	43	0.00	0	
-Female	M/D	87	0.00	0	48	0.00	0	116	0.00	0	116	0.00	0	61	0.00	0	71	0.00	0	40	0.00	0	53	0.00	0	
Hired Labour																										
-Male	M/D	28	90.00	2,520	19	90.00	1,710	16	90.00	1,440	16	90.00	1,440	10	90.00	900	11	90.00	990	0	90.00	0	6	90.00	540	
-Female	M/D	36	45.00	1,620	16	45.00	720	23	45.00	1,040	23	45.00	1,040	5	45.00	225	6	45.00	270	0	45.00	0	12	45.00	540	
Sub-total (d)		216		4,140	124		2,430	226		2,480	226		2,480	108		1,040	147		1,260	70		0	114		1,080	
e) Miscellaneous (5%)																										
Total Cost	NRs			9,944			7,823			20,811			20,811			2,352			3,770			1,365			4,211	
C) Return (A - B)	NRs			29,337			8,578			49,329			38,689			7,778			12,551			11,675			7,080	
				(74.7%)			(52.3%)			(70.3%)			(65.0%)			(76.8%)			(76.9%)			(89.5%)			(62.7%)	

Table 6 - 9 Financial Cost and Return under Without and With Project Condition (2/2)

Description		With Project Condition																								
Crop (ha)	Unit	Paddy			Peas			E.L. Peas			Legumes (Broad bean)			Summer Veg. (Tomato)			Winter Veg. (Cauliflower)			Green Leaf Veg. (Broad Leaf Mustard)			Bubb crop (Onion)			
		Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	
A) Output																										
a) Production	Kg	5,200	8.50	44,200	13,000	7.00	91,000	11,000	7.00	77,000	1,500	12.00	18,000	12,000	7.65	91,800	16,000	8.73	139,680	20,000	5.90	118,000	18,000	5.40	97,200	0
b) By-product	Kg	5,096	0.80	4,080	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0	0	0
c) Gross Income	NRs			48,280			91,000			77,000			18,000			91,800			139,680			118,000			97,200	
B) Input																										
a) Seed	Kg	50	16.80	840	1,000	16.80	16,800	1,000	16.80	16,800	39	12.00	470	30000	0.10	3,000	0.7	300.00	210	6	80.00	480	10	225.00	2,250	
b) Fertilizer																										
Complex	Kg	150	10.20	1,530	150	10.20	1,530	150	10.20	1,530	127	10.20	1,300	300	10.20	3,060	300	10.20	3,060	200	10.20	2,040	200	10.20	2,040	2,040
Urea	Kg	90	5.72	510	55	5.72	300	55	5.72	300	0	5.72	0	90	5.72	510	90	5.72	510	133	5.72	760	45	5.72	260	5,720
Push	Kg	16	8.50	140	116	8.50	990	116	8.50	990	0	8.50	0	133	8.50	1,130	40	8.50	340	66	8.50	560	85	8.50	720	720
Manure	Kg	6,000	0.50	3,000	15,000	0.50	7,500	15,000	0.50	7,500	1,114	0.50	560	10,000	0.50	5,000	20,000	0.50	10,000	10,000	0.50	5,000	10,000	0.50	5,000	5,000
c) Agro-chemical	Kg	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	2	450.00	900	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	1,800
Sub-total (a to c)				7,820			28,920			28,920			3,250			14,500			15,920			10,640			12,070	
d) Labour Requirement																										
Family Labour																										
-Male	M/D	65	0.00	0	71	0.00	0	71	0.00	0	59	0.00	0	44	0.00	0	134	0.00	0	79	0.00	0	178	0.00	0	0
-Female	M/D	87	0.00	0	116	0.00	0	116	0.00	0	71	0.00	0	250	0.00	0	232	0.00	0	102	0.00	0	112	0.00	0	0
Hired Labour																										
-Male	M/D	28	90.00	2,520	16	90.00	1,440	16	90.00	1,440	11	90.00	990	6	90.00	540	16	90.00	1,440	58	90.00	5,220	215	90.00	19,350	19,350
-Female	M/D	36	45.00	1,620	23	45.00	1,040	23	45.00	1,040	6	45.00	270	27	45.00	1,220	8	45.00	360	86	45.00	3,870	105	45.00	4,725	4,725
Sub-total (d)		216	4,140	4,140	226	4,480	2,480	226	4,480	2,480	147	1,260	1,260	327	1,800	1,760	390	1,800	1,800	325	1,800	9,090	610	45,000	24,080	24,080
e) Miscellaneous (5%)				598			1,570			1,570			225			815			886			987			1,808	1,808
Total Cost	NRs			12,558			35,970			35,970			4,715			17,075			18,606			20,717			37,958	37,958
C) Return (A-B)	NRs			35,722			58,050			58,050			13,286			74,727			86,176			121,074			97,284	59,243
				(74.0%)			(53.8%)			(57.2%)			(73.8%)			(81.4%)			(86.7%)			(82.4%)			(66.9%)	(66.9%)

Table 6 - 10 Economic Cost and Return under Without and With Project Condition (1/2)

Description	Without Project Condition																										
	Paddy			Wheat			Potato			E.L. Potato			Mustard			Legumes (Broad bean)			Legumes (Garden Pea)			Maize					
	Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)		
A) Output																											
a) Production	kg	4,230	10.30	43,570	1,990	14.30	28,460	10,020	7.00	70,140	8,500	7.00	59,500	600	16.00	9,600	1,360	12.00	16,320	815	16.00	13,040	1,460	10.50	15,330		
b) By-product	Kg	4,145	0.80	3,320	1,910	0.25	480	0	0.00	0	0	0.00	0	560	0.80	530	0	0.00	0	0	0.00	0	1,372	0.25	340		
Gross Income	NRs			46,890			28,940			70,140			59,500			10,130			16,320			13,040			15,670		
B) Input																											
a) Seed	Kg	50	16.80	840	139	12.00	1,670	695	16.80	11,680	695	16.80	11,680	17	18.00	310	39	12.00	470	15	25.00	380	23	10.00	230		
b) Fertilizer																											
Complex	Kg	211	11.36	2,400	160	11.36	1,820	207	11.36	2,350	207	11.36	2,350	16	11.36	180	127	11.56	1,440	80	11.36	910	84	11.36	940		
Urea	Kg	151	12.57	1,900	133	12.57	1,670	157	12.57	1,970	157	12.57	1,970	74	12.57	930	0	0.00	0	0	12.57	0	87	12.57	1,080		
Potash	Kg	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	0	8.50	0	8.50	0	8.50	0	8.50	0		
Manure	Kg	2,951	0.45	1,310	1,926	0.45	860	5,295	0.45	2,360	5,295	0.45	2,360	611	0.45	270	1,114	0.45	500	202	0.45	90	2,674	0.45	1,190		
c) Agro-chemical	Kg	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	0	450.00	0	450.00	0	450.00	0	450.00	0		
Sub-total (a to c)				6,450			6,020			18,560			18,560			1,690			2,410			1,380			3,460		
d) Labour Requirement																											
Family Labour																											
-Male	M/D	65	63.00	4,100	41	63.00	2,580	71	63.00	4,470	71	63.00	4,470	34	63.00	2,140	59	63.00	3,720	30	63.00	1,890	43	63.00	2,710		
-Female	M/D	87	31.50	2,740	48	31.50	1,510	116	31.50	3,650	116	31.50	3,650	61	31.50	1,920	71	31.50	2,240	40	31.50	1,260	53	31.50	1,670		
Hired Labour																											
-Male	M/D	28	63.00	1,760	19	63.00	1,200	16	63.00	1,010	16	63.00	630	10	63.00	630	11	63.00	690	0	63.00	0	6	63.00	380		
-Female	M/D	36	31.50	1,130	16	31.50	500	23	31.50	720	23	31.50	720	3	31.50	90	6	31.50	190	6	31.50	190	12	31.50	380		
Sub-total (d)		216		9,730	124		5,790	226		9,850	226		9,850	108		4,780	147		6,840	70		3,150	114		5,140		
e) Miscellaneous (5%)																											
				809			591			1,411			1,411			324			465			227			430		
Total Cost	NRs			16,989			12,401			29,621			29,621			6,794			9,713			4,757			9,030		
C) Return (A - B)																											
	NRs			29,901			16,540			40,520			29,880			3,337			6,608			8,284				6,640	
				(65.8%)			(57.5%)			(57.8%)			(50.2%)			(31.9%)			(40.5%)			(63.5%)				(42.4%)	

Table 6 - 10 Economic Cost and Return under Without and With Project Condition (2/2)

Description		With Project Condition																								
		Paddy		Potato		E.L. Potato		Legumes (Broad bean)		Summer Veg. (Tomato)		Winter Veg. (Cauliflower)		Green Leaf Veg. (Broad Leaf Mustard)		Bath crop (Onion)										
Description	Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)							
A) Output																										
a) Production	kg	5,200	10.30	53,560	13,000	7.00	91,000	11,000	7.00	77,000	1,500	12.00	18,000	12,000	7.65	91,800	16,000	8.73	139,680	20,000	5.90	118,000	18,000	5.40	97,200	
b) By-product	Kg	5,096	0.80	4,080	0	0.00	0	0	0.00	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c) Gross Income	NRs			57,640			91,000			77,000			18,000			91,800			139,680				118,000		97,200	
B) Input																										
a) Seed	Kg	50	16.80	840	1,000	16.80	16,800	1,000	16.80	16,800	39	12.00	470	30,000	0.10	3,000	0.7	300.00	210	6	80.00	480	10	225.00	2,250	
b) Fertilizer	Kg	150	11.36	1,700	150	11.36	1,700	127	11.36	1,440	127	11.36	1,440	300	11.36	3,410	300	11.36	3,410	200	11.36	2,270	200	11.36	2,270	
Complex	Kg	90	12.57	1,130	53	12.57	670	53	12.57	670	0	12.57	0	90	12.57	1,130	90	12.57	1,130	135	12.57	1,670	45	12.57	570	
Urea	Kg	16	8.50	140	116	8.50	990	116	8.50	990	0	8.50	0	135	8.50	1,150	40	8.50	340	66	8.50	560	85	8.50	720	
Potash	Kg	6,000	0.45	2,670	15,000	0.45	6,800	15,000	0.45	6,800	1,114	0.45	500	10,000	0.45	4,500	20,000	0.45	8,900	10,000	0.45	4,450	10,000	0.45	4,450	
Manure	Kg	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	2	450.00	900	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	4	450.00	1,800	
c) Agro-chemical	Kg			8,280			28,640			28,640			3,310			14,920			15,790				11,730		12,060	
Sub-total (a to c)																										
d) Labour Requirement																										
Family Labour																										
-Male	M/D	65	63.00	4,100	71	63.00	4,470	71	63.00	4,470	59	63.00	3,720	44	63.00	2,770	134	63.00	8,440	79	63.00	4,980	178	63.00	11,210	
-Female	M/D	87	31.50	2,740	116	31.50	3,650	116	31.50	3,650	71	31.50	2,240	250	31.50	7,880	232	31.50	7,310	102	31.50	3,210	112	31.50	3,530	
Hired Labour																										
-Male	M/D	28	63.00	1,760	16	63.00	1,010	16	63.00	1,010	11	63.00	690	6	63.00	380	16	63.00	1,010	58	63.00	3,650	215	63.00	13,550	
-Female	M/D	36	31.50	1,130	23	31.50	720	23	31.50	720	6	31.50	190	27	31.50	850	8	31.50	250	86	31.50	2,710	105	31.50	3,310	
Sub-total (d)		216		9,730	226		9,830	226		9,830	147		6,840	327		11,880	390		17,010	325		14,530	611		31,600	
e) Miscellaneous (%)				901			1,925			1,925			508			1,340			1,640				1,289		2,183	
Total Cost	NRs			18,911			40,415			40,415			10,658			28,140			34,440				27,069		45,843	
C) Return (A - B)	NRs			38,730			50,586			50,586			7,343			63,660			105,240				90,931		51,387	
				(67.3%)			(53.6%)			(47.5%)			(40.8%)			(69.3%)			(75.3%)				(77.1%)		(52.8%)	

Table 6 - 11 Financial Irrigation Benefit under Without and With Project Condition

<Without Project Condition>																
Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potatoes	Early Potatoes	Late Potatoes	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs/ha)	(ha)	29,337	8,578	7,080	7,778	49,329	38,689	38,689	12,551	11,675	-	-	-	-	('000 NRs.)	('000 NRs.)
Kathmandu District																
AK - 04 Biswambhara	92	2,429	584	65	72	545	0	0	0	0					3,694	40
AK - 05 Boshan	122	3,579	607	0	266	602	0	0	0	0					5,054	41
AK - 07 Dakshinkali	67	1,966	126	0	182	99	0	0	0	289					2,663	40
AK - 14 Indrayani	101	2,904	676	14	16	897	0	0	0	0					4,506	45
AK - 25 Shali Nadi	157	4,606	673	0	61	1,859	851	851	0	0					8,900	57
Sub-total	539	15,483	2,667	79	596	4,001	851	851	0	289					24,817	46
Bhaktapur District																
AB - 02 Bidol	32	939	220	0	0	158	0	0	0	0					1,316	41
AB - 10 Katunje	40	1,115	254	14	19	296	0	0	0	0					1,698	42
AB - 12 Kutudhal	43	1,261	295	0	7	276	0	0	0	0					1,839	43
AB - 14 Mahadev Khola	112	3,220	769	16	44	276	0	0	42	0					4,366	39
Sub-total	227	6,535	1,537	30	69	1,006	0	0	42	0					9,219	41
Lalitpur District																
AL - 10 Kothu	246	6,640	1,393	105	230	1,456	0	0	0	0					9,823	40
AL - 13 Lubhu	130	3,547	725	46	51	321	0	0	245	0					4,934	38
AL - 19 Thika Bhairaw-(I)	497	12,685	3,197	387	309	2,206	0	0	187	0					18,972	38
AL - 20 Thika Bhairaw-(II)	88	2,530	642	0	14	130	0	0	22	0					3,338	38
Sub-total	961	25,401	5,957	538	603	4,114	0	0	454	0					37,066	39
Total	1,727	47,420	10,160	647	1,268	9,120	851	851	496	289					71,103	41
<With Project Condition>																
Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potatoes	Early Potatoes	Late Potatoes	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs/ha)	(ha)	35,722	-	-	-	58,030	44,030	44,030	13,286	-	74,727	121,074	97,284	59,243	('000 NRs.)	('000 NRs.)
Kathmandu District																
AK - 04 Biswambhara	92	1,643				1,335	506	506	153		3,437	4,177	2,238	681	14,677	160
AK - 05 Boshan	122	2,179				1,770	403	403	284		4,558	4,801	1,780	1,265	17,442	143
AK - 07 Dakshinkali	67	1,197				972	369	369	111		2,503	3,042	1,630	496	10,688	160
AK - 14 Indrayani	101	1,804				1,465	556	556	168		3,774	4,586	2,456	748	16,112	160
AK - 25 Shali Nadi	157	2,804				2,278	864	864	261		5,866	8,079	5,346	698	27,659	172
Sub-total	539	9,627				7,820	2,698	2,698	976		20,139	24,684	13,450	3,888	85,979	160
Bhaktapur District																
AB - 02 Bidol	32	572				464	106	106	74		1,196	1,259	467	332	4,575	143
AB - 10 Katunje	40	714				290	440	0	28		1,495	1,816	486	124	5,394	135
AB - 12 Kutudhal	43	768				187	473	0	0		1,607	1,692	314	0	5,041	117
AB - 14 Mahadev Khola	112	2,000				487	1,233	0	138		4,185	4,407	817	615	13,883	124
Sub-total	227	4,054				1,429	2,252	106	240		8,482	9,174	2,084	1,072	28,893	127
Lalitpur District																
AL - 10 Kothu	246	4,394				3,569	812	812	572		9,191	9,680	3,590	2,550	35,171	143
AL - 13 Lubhu	130	2,322				943	1,431	0	216		4,857	5,902	1,581	963	18,215	140
AL - 19 Thika Bhairaw-(I)	497	8,877				7,210	1,641	1,641	1,156		18,570	19,556	7,253	5,153	71,056	143
AL - 20 Thika Bhairaw-(II)	88	1,572				1,277	484	484	146		3,288	3,995	2,140	652	14,039	160
Sub-total	961	17,164				12,999	4,369	2,938	2,090		35,906	39,134	14,563	9,317	138,481	144
Total	1,727	30,846				22,247	9,319	5,742	3,306		64,527	72,992	30,097	14,277	253,353	147
<Incremental Benefit>																
Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potatoes	Early Potatoes	Late Potatoes	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs/ha)	(ha)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kathmandu District																
AK - 04 Biswambhara	92	-786	-584	-65	-72	790	506	506	153	0	3,437	4,177	2,238	681	10,982	119
AK - 05 Boshan	122	-1,400	-607	0	-266	1,168	403	403	284	0	4,558	4,801	1,780	1,265	12,389	102
AK - 07 Dakshinkali	67	-769	-126	0	-182	873	369	369	111	-289	2,503	3,042	1,630	496	8,015	120
AK - 14 Indrayani	101	-1,100	-676	-14	-16	568	556	556	168	0	3,774	4,586	2,456	748	11,606	115
AK - 25 Shali Nadi	157	-1,802	-673	0	-61	419	13	13	261	0	5,866	8,079	5,346	698	18,188	116
Sub-total	539	-5,856	-2,667	-79	-596	3,818	1,847	1,847	976	-289	20,139	24,684	13,450	3,888	61,161	113
Bhaktapur District																
AB - 02 Bidol	32	-367	-220	0	0	306	106	106	74	0	1,196	1,259	467	332	3,259	102
AB - 10 Katunje	40	-400	-254	-14	-19	-6	440	0	28	0	1,495	1,816	486	124	3,697	92
AB - 12 Kutudhal	43	-493	-295	0	-7	-89	473	0	0	0	1,607	1,692	314	0	3,202	74
AB - 14 Mahadev Khola	112	-1,220	-769	-16	-44	211	1,233	0	96	0	4,185	4,407	817	615	9,517	85
Sub-total	227	-2,481	-1,537	-30	-69	423	2,252	106	198	0	8,482	9,174	2,084	1,072	19,674	87
Lalitpur District																
AL - 10 Kothu	246	-2,246	-1,393	-105	-230	2,113	812	812	572	0	9,191	9,680	3,590	2,550	25,348	103
AL - 13 Lubhu	130	-1,225	-725	-46	-51	622	1,431	0	-29	0	4,857	5,902	1,581	963	13,281	102
AL - 19 Thika Bhairaw-(I)	497	-3,808	-3,197	-387	-309	5,004	1,641	1,641	968	0	18,570	19,556	7,253	5,153	52,084	105
AL - 20 Thika Bhairaw-(II)	88	-958	-642	0	-14	1,146	484	484	124	0	3,288	3,995	2,140	652	10,701	122
Sub-total	961	-8,237	-5,957	-538	-603	8,885	4,369	2,938	1,636	0	35,906	39,134	14,563	9,317	101,415	106
Total	1,727	-16,574	-10,160	-647	-1,268	13,127	8,468	4,891	2,810	-289	64,527	72,992	30,097	14,277	182,249	106
Potato Total :							26,485	Legume :		2,520	Vegetable Total :					181,893

Remarks : * : Due to the limitation of irrigable area in dry season, Yield is reduced in the 58% of total planted area.
 # : Due to the limitation of irrigable area in dry season, Yield is reduced in the whole planted area.
 " : Due to the limitation of irrigable area in dry season, Yield is reduced in the 47% of total planted area.

Table 6 - 12 Economic Irrigation Benefit under Without and With Project Condition

<Without Project Condition>

Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potatoes	Early Potatoes	Late Potatoes	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs./ha)	(ha)	29,901	16,540	6,640	3,337	40,520	29,880	29,880	6,608	8,284	-	-	-	-	('000 NRs.)	('000 NRs.)
Kathmandu District																
AK - 04 Biswanbshara	92	2,476	1,126	61	31	447	0	0	0	0					4,141	45
AK - 05 Boshan	122	3,648	1,170	0	114	494	0	0	0	0					5,427	44
AK - 07 Dakshinkali	67	2,003	244	0	78	81	0	0	0	205					2,612	39
AK - 14 Indrayani	101	2,960	1,303	13	7	737	0	0	0	0					5,019	50
AK - 25 Shali Nadi	157	4,694	1,298	0	26	1,527	657	657	0	0					8,859	56
Sub-total	539	15,781	5,142	75	256	3,287	657	657	0	205					26,059	48
Bhaktapur District																
AD - 02 Bidol	32	957	423	0	0	130	0	0	0	0					1,510	47
AD - 10 Katunje	40	1,136	490	13	8	243	0	0	0	0					1,890	47
AD - 12 Kutudhat	43	1,286	569	0	3	227	0	0	0	0					2,084	48
AD - 14 Mahadev Khola	112	3,282	1,482	15	19	227	0	0	22	0					5,047	45
Sub-total	227	6,661	2,964	28	30	826	0	0	22	0					10,531	46
Lalitpur District																
AL - 10 Kothu	246	6,767	2,685	98	99	1,196	0	0	0	0					10,845	44
AL - 13 Lubhu	130	3,615	1,398	43	23	263	0	0	129	0					5,470	42
AL - 19 Thika Bhairow-(I)	497	12,929	6,165	363	133	1,812	0	0	99	0					21,501	43
AL - 20 Thika Bhairow-(II)	88	2,579	1,237	0	6	107	0	0	12	0					3,940	45
Sub-total	961	25,890	11,486	504	259	3,379	0	0	239	0					41,756	43
Total	1,727	48,332	19,591	607	544	7,492	657	657	261	205					78,346	45

<With Project Condition>

Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potatoes	Early Potatoes	Late Potatoes	Broad Bean	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs./ha)	(ha)	38,730	-	-	-	50,586	36,586	36,586	7,343	-	63,660	105,240	90,931	51,357	('000 NRs.)	('000 NRs.)
Kathmandu District																
AK - 04 Biswanbshara	92	1,782				1,163	421	421	84		2,928	3,631	2,091	591	13,112	143
AK - 05 Boshan	122	2,363				1,543	335	335	157		3,883	4,173	1,664	1,096	15,548	127
AK - 07 Dakshinkali	67	1,297				847	306	306	61		2,133	2,644	1,523	430	9,549	143
AK - 14 Indrayani	101	1,956				1,277	462	462	93		3,215	3,986	2,296	648	14,395	143
AK - 25 Shali Nadi	157	3,040				1,986	718	718	144		4,997	7,022	4,997	605	24,227	154
Sub-total	539	10,438				6,816	2,242	2,242	540		17,156	21,456	12,571	3,370	76,831	143
Bhaktapur District																
AD - 02 Bidol	32	620				405	88	88	41		1,019	1,094	436	288	4,078	127
AD - 10 Katunje	40	775				253	366	0	15 *		1,273	1,579	455	108 *	4,823	121
AD - 12 Kutudhat	43	833				163	393	0	0 #		1,369	1,471	293	0 #	4,422	105
AD - 14 Mahadev Khola	112	2,169				425	1,024	0	76 "		3,565	3,831	764	533 "	12,388	111
Sub-total	227	4,396				1,246	1,871	88	133		7,225	7,975	1,948	929	25,811	114
Lalitpur District																
AL - 10 Kothu	246	4,764				3,111	675	675	316		7,830	8,414	3,355	2,211	31,351	127
AL - 13 Lubhu	130	2,517				822	1,189	0	119		4,138	5,130	1,478	835	16,228	125
AL - 19 Thika Bhairow-(I)	497	9,624				6,285	1,364	1,364	639		15,820	16,999	6,779	4,467	63,340	127
AL - 20 Thika Bhairow-(II)	88	1,704				1,113	402	402	81		2,801	3,473	2,000	365	12,542	143
Sub-total	961	18,610				11,331	3,630	2,441	1,155		30,589	34,016	13,612	8,077	123,462	128
Total	1,727	33,443				19,393	7,743	4,771	1,827		54,970	63,447	28,132	12,376	226,103	131

<Incremental Benefit>

Crops	Farm Land	Paddy	Wheat	Maize	Mustard	Potato	Potatoes	Early Potatoes	Late Potatoes	Garden Pea	Summer Vege.	Winter Vege.	Green Leaf Veg.	Bulb crop	Total Area	Incremental Benefit per ha
Return by crop (NRs./ha)	(ha)															
Kathmandu District																
AK - 04 Biswanbshara	92	-694	-1,126	-61	-31	716	421	421	84	0	2,928	3,631	2,091	591	8,971	98
AK - 05 Boshan	122	-1,285	-1,170	0	-114	1,049	335	335	157	0	3,883	4,173	1,664	1,096	10,122	83
AK - 07 Dakshinkali	67	-706	-244	0	-78	766	306	306	61	-205	2,133	2,644	1,523	430	6,937	104
AK - 14 Indrayani	101	-1,004	-1,303	-13	-7	541	462	462	93	0	3,215	3,986	2,296	648	9,375	93
AK - 25 Shali Nadi	157	-1,654	-1,298	0	-26	459	61	61	144	0	4,997	7,022	4,997	605	15,367	98
Sub-total	539	-5,343	-5,142	-75	-256	3,530	1,585	1,585	540	-205	17,156	21,456	12,571	3,370	50,772	94
Bhaktapur District																
AD - 02 Bidol	32	-337	-423	0	0	275	88	88	41	0	1,019	1,094	436	288	2,548	80
AD - 10 Katunje	40	-362	-490	-13	-8	10	366	0	15	0	1,273	1,579	455	108	2,933	73
AD - 12 Kutudhat	43	-453	-569	0	-3	-63	393	0	0	0	1,369	1,471	293	0	2,438	57
AD - 14 Mahadev Khola	112	-1,113	-1,482	-15	-19	198	1,024	0	54	0	3,565	3,831	764	533	7,341	66
Sub-total	227	-2,265	-2,964	-28	-30	419	1,871	88	111	0	7,225	7,975	1,948	929	15,280	67
Lalitpur District																
AL - 10 Kothu	246	-2,003	-2,685	-98	-99	1,915	675	675	316	0	7,830	8,414	3,355	2,211	20,506	83
AL - 13 Lubhu	130	-1,098	-1,398	-43	-22	359	1,189	0	-10	0	4,138	5,130	1,478	835	16,759	83
AL - 19 Thika Bhairow-(I)	497	-3,304	-6,165	-363	-133	4,473	1,364	1,364	640	0	15,820	16,999	6,779	4,467	41,839	84
AL - 20 Thika Bhairow-(II)	88	-875	-1,237	0	-6	1,006	402	402	69	0	2,801	3,473	2,000	365	8,602	98
Sub-total	961	-7,280	-11,486	-504	-259	7,952	3,630	2,441	916	0	30,589	34,016	13,612	8,077	81,705	85
Total	1,727	-14,888	-19,591	-607	-544	11,902	7,086	4,114	1,566	-205	54,970	63,447	28,132	12,376	147,757	86
Potato Total :							23,102	Legume :		1,361	Vegetable Total :					158,925

Remarks : * : Due to the limitation of irrigable area in dry season, Yield is reduced in the 58% of total planted area.
 # : Due to the limitation of irrigable area in dry season, Yield is reduced in the whole planted area.
 " : Due to the limitation of irrigable area in dry season, Yield is reduced in the 47% of total planted area.

Table 6 - 13 Net Farm Income Without and With Project Condition

Scheme No. /Name	Average Farm Size (ha)	Without Project				With Project				Incremental Farm Income					
		Net Crop Income	Livestock Income	Total Income	Area	(Extent %)	Net Crop Income		Livestock Income	Total Income	Incremental (NRs / year)	Ratio* (%)			
							Gross Income	Production Cost							
Kathmandu District															
AK - 04 Biswambhara	0.41	23,800	7,335	16,464	7,150	23,614	Intensive - I	(50)	106,654	24,274	82,380	7,150	89,530	65,916	(27)9
							Remote - I	(50)	64,169	15,735	48,434	7,150	55,584	31,970	(135)
AK - 05 Boshan	0.28	16,420	4,822	11,598	2,102	13,700	Intensive - I	(30)	72,836	16,577	56,259	2,102	58,361	44,661	(326)
							Remote - I	(70)	43,823	10,746	33,077	2,102	35,179	21,479	(157)
AK - 07 Dakshinkali	0.28	14,942	3,813	11,129	5,783	16,912	Intensive - I	(50)	72,836	16,577	56,259	5,783	62,042	45,130	(267)
							Remote - I	(50)	43,823	10,746	33,077	5,783	38,860	21,948	(130)
AK - 14 Indrayani	0.37	23,806	7,298	16,508	3,096	19,604	Intensive - I	(50)	96,249	21,906	74,343	3,096	77,439	57,835	(295)
							Remote - I	(50)	57,909	14,200	43,709	3,096	46,805	27,201	(139)
AK - 25 Shasi Nadi	0.27	22,000	6,695	15,305	1,512	16,817	Intensive - I	(70)	70,235	15,985	54,250	1,512	55,762	38,945	(232)
							Remote - I	(30)	42,258	10,362	31,896	1,512	33,408	16,591	(99)
Bhaktapur District															
AB - 02 Bidol	0.19	11,289	3,474	7,815	2,785	10,600	Intensive - I	(30)	49,425	11,249	38,176	2,785	40,961	30,561	(286)
							Remote - I	(70)	29,737	7,292	22,445	2,785	25,230	14,630	(138)
AB - 10 Kanuje	0.24	14,675	4,490	10,185	2,931	13,116	Intensive - III	(50)	50,731	10,988	39,743	2,931	42,674	29,558	(225)
							Remote - II	(21)	36,723	9,211	27,512	2,931	30,443	17,327	(132)
							Remote - II (drought)	(29)	32,371	9,211	23,160	2,931	26,091	12,975	(99)
AB - 12 Kunudhal	0.30	18,516	5,686	12,830	5,957	18,787	Intensive - III	(30)	63,414	13,735	49,679	5,957	55,636	36,849	(196)
							Remote - II	(6)	45,903	11,513	34,390	5,957	40,347	21,560	(115)
							Remote - II (drought)	(70)	40,463	11,513	28,950	5,957	34,907	16,120	(86)
AB - 14 Mahadev Khola	0.26	14,649	4,513	10,136	1,778	11,914	Intensive - III	(30)	54,959	11,904	43,055	1,778	44,833	32,919	(276)
							Remote - II	(37)	39,783	9,978	29,805	1,778	31,583	19,669	(165)
							Remote - II (drought)	(33)	35,068	9,978	25,090	1,778	26,868	14,954	(126)
Lalitpur District															
AL - 10 Karkhu	0.19	10,882	3,295	7,587	587	8,174	Intensive - I	(30)	49,425	11,249	38,176	587	38,763	30,589	(374)
							Remote - I	(70)	29,737	7,292	22,445	587	23,032	14,858	(182)
AL - 13 Lathu	0.23	12,470	3,741	8,729	0	8,729	Intensive - III	(50)	48,617	10,530	38,087	0	38,087	29,358	(336)
							Remote - II	(50)	35,193	8,827	26,366	0	26,366	17,637	(202)
AL - 19 Thika Bhairav-(I)	0.25	13,832	4,289	9,543	629	10,172	Intensive - I	(30)	65,033	14,801	50,232	629	50,861	40,689	(400)
							Remote - I	(70)	39,127	9,594	29,533	629	30,162	19,990	(197)
AL - 20 Thika Bhairav-(II)	0.13	7,159	2,228	4,931	328	5,259	Intensive - I	(50)	33,817	7,697	26,120	328	26,448	21,189	(403)
							Remote - I	(50)	20,346	4,989	15,357	328	15,685	10,426	(198)

Remark : * Increment ratio between without and with condition

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (1/13)

(Unit : NRs.)

Scheme		AK-04 Biswambhara			
Holding Size (ha)		0.41			
No. of Family		5.9			
		Without Project *	With Project		Remote (drought)
			Intensive	Remote	
Farm Income					
Gross Farm Income		23,800	106,650	64,170	
Paddy	Planted Area (ha)	0.369	0.205	0.205	
	Production	1,561	1,066	1,066	
	Gross Income	14,494	9,897	9,897	
Wheat	Planted Area (ha)	0.303			
	Production	604			
	Gross Income	4,976			
Maize	Planted Area (ha)	0.041			
	Production	60			
	Gross Income	463			
Mustard	Planted Area (ha)	0.041			
	Production	25			
	Gross Income	415			
Potatoes	Planted Area (ha)	0.049	0.103	0.103	
	Production	493	1,333	1,333	
	Gross Income	3,451	9,328	9,328	
E.L. Potatoes	Planted Area (ha)		0.205		
	Production		2,256		
	Gross Income		15,786		
Legumes	Planted Area (ha)			0.103	
	Production			154	
	Gross Income			1,845	
Vegetables	Planted Area (ha)		0.615	0.410	
	Production		9,840	5,945	
	Gross Income		71,643	43,099	
Livestock Income		7,150	7,150	7,150	
Total Farm Income		30,950	113,800	71,320	
Non Farm Income		19,790	19,790	19,790	
Gross Family Income		50,740	133,590	91,110	
Production Cost (Farm Expense)		7,340	24,274	15,735	
Living Expense **		30,680	35,280	35,280	
Net Reserve		12,720	74,036	40,095	
<hr/>					
Per Capita Monthly Income		717	1,887	1,287	
(Increment ratio between without and with)			(163%)	(80%)	
Net Farm Income ***		43,400	109,316	75,375	
(Increment ratio between without and with)			(152%)	(74%)	

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (2/13)

(Unit : NRs.)

Scheme		AK-05 Boshan		
Holding Size (ha)		0.28		
No. of Family		5.6		
		Without Project *	With Project	
			Intensive	Remote
				Remote (drought)
Farm Income				
Gross Farm Income		16,420	72,840	43,820
Paddy	Planted Area (ha)	0.280	0.140	0.140
	Production	1,184	728	728
	Gross Income	10,998	6,759	6,759
Wheat	Planted Area (ha)	0.162		
	Production	323		
	Gross Income	2,663		
Maize	Planted Area (ha)			
	Production			
	Gross Income			
Mustard	Planted Area (ha)	0.078		
	Production	47		
	Gross Income	794		
Potatoes	Planted Area (ha)	0.028	0.070	0.070
	Production	281	910	910
	Gross Income	1,964	6,370	6,370
E.L. Potatoes	Planted Area (ha)		0.140	
	Production		1,540	
	Gross Income		10,780	
Legumes	Planted Area (ha)			0.070
	Production			105
	Gross Income			1,260
Vegetables	Planted Area (ha)		0.420	0.280
	Production		6,720	4,060
	Gross Income		48,927	29,434
Livestock Income		2,100	2,100	2,100
Total Farm Income		18,520	74,940	45,920
Non Farm Income		18,560	18,560	18,560
Gross Family Income		37,080	93,500	64,480
Production Cost (Farm Expense)		4,820	16,577	10,746
Living Expense **		28,860	33,190	33,190
Net Reserve		3,400	43,733	20,544
Per Capita Monthly Income		552	1,391	960
(Increment ratio between without and with)			(152%)	(74%)
Net Farm Income ***		32,260	76,923	53,734
(Increment ratio between without and with)			(138%)	(67%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (3/13)

(Unit : NRs.)

Scheme		AK-07 Dakshinkali			
Holding Size (ha)		0.28			
No. of Family		5.9			
		Without Project *	With Project		Remote (drought)
			Intensive	Remote	
Farm Income					
Gross Farm Income		14,940	72,840	43,820	
Paddy	Planted Area (ha)	0.280	0.140	0.140	
	Production	1,184	728	728	
	Gross Income	10,998	6,759	6,759	
Wheat	Planted Area (ha)	0.062			
	Production	123			
	Gross Income	1,010			
Maize	Planted Area (ha)				
	Production				
	Gross Income				
Mustard	Planted Area (ha)	0.098			
	Production	59			
	Gross Income	993			
Potatoes	Planted Area (ha)	0.008	0.070	0.070	
	Production	84	910	910	
	Gross Income	589	6,370	6,370	
E.L. Potatoes	Planted Area (ha)		0.140		
	Production		1,540		
	Gross Income		10,780		
Legumes	Planted Area (ha)	0.104		0.070	
	Production	84		105	
	Gross Income	1,351		1,260	
Vegetables	Planted Area (ha)		0.420	0.280	
	Production		6,720	4,060	
	Gross Income		48,927	29,434	
Livestock Income		5,780	5,780	5,780	
Total Farm Income		20,720	78,620	49,600	
Non Farm Income		19,770	19,770	19,770	
Gross Family Income		40,490	98,390	69,370	
Production Cost (Farm Expense)		3,810	16,577	10,746	
Living Expense **		30,410	34,970	34,970	
Net Reserve		6,270	46,843	23,654	
<hr/>					
Per Capita Monthly Income		572	1,390	980	
(Increment ratio between without and with)			(143%)	(71%)	
Net Farm Income ***		36,680	81,813	58,624	
(Increment ratio between without and with)			(123%)	(60%)	

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (4/13)

(Unit : NRs.)

Scheme		AK-14 Indrayani		
Holding Size (ha)		0.37		
No. of Family		5.7		
		Without Project *	With Project	
			Intensive	Remote
Farm Income				
Gross Farm Income		23,810	96,250	57,910
Paddy	Planted Area (ha)	0.363	0.185	0.185
	Production	1,534	962	962
	Gross Income	14,243	8,932	8,932
Wheat	Planted Area (ha)	0.289		
	Production	574		
	Gross Income	4,733		
Maize	Planted Area (ha)	0.007		
	Production	11		
	Gross Income	84		
Mustard	Planted Area (ha)	0.007		
	Production	4		
	Gross Income	75		
Potatoes	Planted Area (ha)	0.067	0.093	0.093
	Production	667	1,203	1,203
	Gross Income	4,671	8,418	8,418
E.L. Potatoes	Planted Area (ha)		0.185	
	Production		2,036	
	Gross Income		14,246	
Legumes	Planted Area (ha)			0.093
	Production			139
	Gross Income			1,665
Vegetables	Planted Area (ha)		0.555	0.370
	Production		8,880	5,365
	Gross Income		64,654	38,894
Livestock Income		3,100	3,100	3,100
Total Farm Income		26,910	99,350	61,010
Non Farm Income		25,800	25,800	25,800
Gross Family Income		52,710	125,150	86,810
Production Cost (Farm Expense)		7,300	21,906	14,200
Living Expense **		29,640	34,090	34,090
Net Reserve		15,770	69,154	38,520
<hr/>				
Per Capita Monthly Income		771	1,830	1,269
(Increment ratio between without and with)			(137%)	(65%)
Net Farm Income ***		45,410	103,244	72,610
(Increment ratio between without and with)			(127%)	(60%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (5/13)

(Unit : NRs.)

Scheme		AK-25 Shali Nadi		
Holding Size (ha)		0.27		
No. of Family		6.4		
		Without Project *	With Project	
			Intensive	Remote (drought)
Farm Income				
Gross Farm Income		20,430	70,240	42,260
Paddy	Planted Area (ha)	0.270	0.135	0.135
	Production	1,142	702	702
	Gross Income	10,606	6,518	6,518
Wheat	Planted Area (ha)	0.135		
	Production	269		
	Gross Income	2,214		
Maize	Planted Area (ha)			
	Production			
	Gross Income			
Mustard	Planted Area (ha)	0.014		
	Production	8		
	Gross Income	137		
Potatoes	Planted Area (ha)	0.065	0.068	0.068
	Production	649	878	878
	Gross Income	4,545	6,143	6,143
E.L. Potatoes	Planted Area (ha)	0.076	0.135	
	Production	643	1,486	
	Gross Income	2,925	10,396	
Legumes	Planted Area (ha)			0.068
	Production			101
	Gross Income			1,215
Vegetables	Planted Area (ha)		0.405	0.270
	Production		6,480	3,915
	Gross Income		47,180	28,382
Livestock Income		1,510	1,510	1,510
Total Farm Income		21,940	71,750	43,770
Non Farm Income		29,400	29,400	29,400
Gross Family Income		51,340	101,150	73,170
Production Cost (Farm Expense)		6,700	15,985	10,362
Living Expense **		32,990	37,940	37,940
Net Reserve		11,650	47,225	24,868
<hr/>				
Per Capita Monthly Income		668	1,317	953
(Increment ratio between without and with)			(97%)	(43%)
Net Farm Income ***		44,640	85,165	62,808
(Increment ratio between without and with)			(91%)	(41%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (6/13)

(Unit : NRs.)

Scheme		AB-02 Bidol		
Holding Size (ha)		0.19		
No. of Family		6.0		
		Without Project *	With Project	
			Intensive	Remote
Farm Income				
Gross Farm Income		11,290	49,430	29,740
Paddy	Planted Area (ha)	0.190	0.095	0.095
	Production	804	494	494
	Gross Income	7,463	4,587	4,587
Wheat	Planted Area (ha)	0.152		
	Production	302		
	Gross Income	2,493		
Maize	Planted Area (ha)			
	Production			
	Gross Income			
Mustard	Planted Area (ha)			
	Production			
	Gross Income			
Potatoes	Planted Area (ha)	0.019	0.048	0.048
	Production	190	618	618
	Gross Income	1,333	4,323	4,323
E.L. Potatoes	Planted Area (ha)		0.095	
	Production		1,046	
	Gross Income		7,316	
Legumes	Planted Area (ha)			0.048
	Production			71
	Gross Income			855
Vegetables	Planted Area (ha)		0.285	0.190
	Production		4,560	2,755
	Gross Income		33,201	19,973
Livestock Income		2,790	2,790	2,790
Total Farm Income		14,080	52,220	32,530
Non Farm Income		20,270	20,270	20,270
Gross Family Income		34,350	72,490	52,800
Production Cost (Farm Expense)		3,470	11,249	7,292
Living Expense **		30,300	35,570	35,570
Net Reserve		580	25,671	9,938
<hr/>				
Per Capita Monthly Income		477	1,007	733
(Increment ratio between without and with)			(111%)	(54%)
Net Farm Income ***		30,880	61,241	45,508
(Increment ratio between without and with)			(98%)	(47%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (7/13)

(Unit : NRs.)

Scheme		AB-10 Katunje			
Holding Size (ha)		0.24			
No. of Family		5.9			
		Without Project *	With Project		
			Intensive	Remote	Remote (drought)
Farm Income					
Gross Farm Income		14,680	50,730	36,720	33,180
Paddy	Planted Area (ha)	0.228	0.120	0.120	0.120
	Production	964	624	624	624
	Gross Income	8,956	5,794	5,794	5,794
Wheat	Planted Area (ha)	0.178			
	Production	353			
	Gross Income	2,913			
Maize	Planted Area (ha)	0.012			
	Production	18			
	Gross Income	135			
Mustard	Planted Area (ha)	0.014			
	Production	9			
	Gross Income	146			
Potatoes	Planted Area (ha)	0.036	0.060		
	Production	361	780		
	Gross Income	2,525	5,460		
E.L. Potatoes	Planted Area (ha)		0.060	0.060	0.006
	Production		660	660	660
	Gross Income		4,620	4,620	4,620
Legumes	Planted Area (ha)			0.060	0.060
	Production			90	53
	Gross Income			1,080	639
Vegetables	Planted Area (ha)		0.300	0.240	0.240
	Production		4,560	3,480	2,909
	Gross Income		34,858	25,229	22,128
Livestock Income		2,930	2,930	2,930	2,930
Total Farm Income		17,610	53,660	39,650	36,110
Non Farm Income		25,890	25,890	25,890	25,890
Gross Family Income		43,500	79,550	65,540	62,000
Production Cost (Farm Expense)		4,490	10,988	9,211	9,211
Living Expense **		29,890	34,370	34,370	34,370
Net Reserve		9,120	34,192	21,959	18,419
<hr/>					
Per Capita Monthly Income		614	1,124	926	876
(Increment ratio between without and with)			(83%)	(51%)	(43%)
Net Farm Income ***		39,010	68,562	56,329	52,789
(Increment ratio between without and with)			(76%)	(44%)	(35%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (8/13)

(Unit : NRs.)

Scheme		AB-12 Kutudhal			
Holding Size (ha)		0.30			
No. of Family		5.6			
		Without Project *	With Project		
			Intensive	Remote	Remote (drought)
Farm Income					
Gross Farm Income		18,520	63,410	45,900	41,480
Paddy	Planted Area (ha)	0.300	0.150	0.150	0.150
	Production	1,269	780	780	780
	Gross Income	11,784	7,242	7,242	7,242
Wheat	Planted Area (ha)	0.240			
	Production	478			
	Gross Income	3,936			
Maize	Planted Area (ha)				
	Production				
	Gross Income				
Mustard	Planted Area (ha)	0.060			
	Production	4			
	Gross Income	61			
Potatoes	Planted Area (ha)	0.039	0.075		
	Production	391	975		
	Gross Income	2,735	6,825		
E.L. Potatoes	Planted Area (ha)		0.075	0.075	0.075
	Production		825	825	825
	Gross Income		5,775	5,775	5,775
Legumes	Planted Area (ha)			0.075	0.075
	Production			113	67
	Gross Income			1,350	799
Vegetables	Planted Area (ha)		0.375	0.300	0.300
	Production		5,700	4,350	3,637
	Gross Income		43,572	31,536	27,660
Livestock Income		5,960	5,960	5,960	5,960
Total Farm Income		24,480	69,370	51,860	47,440
Non Farm Income		18,560	18,560	18,560	18,560
Gross Family Income		43,040	87,930	70,420	66,000
Production Cost (Farm Expense)		5,690	13,735	11,513	11,513
Living Expense **		31,520	36,250	36,250	36,250
Net Reserve		5,830	37,945	22,657	18,237
<hr/>					
Per Capita Monthly Income		640	1,308	1,048	982
(Increment ratio between without and with)			(104%)	(64%)	(53%)
Net Farm Income ***		37,350	74,195	58,907	54,487
(Increment ratio between without and with)			(99%)	(58%)	(46%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (9/13)

(Unit : NRs.)

Scheme		AB-14 Mahadev Khola			
Holding Size (ha)		0.26			
No. of Family		5.9			
		Without Project *	With Project		
			Intensive	Remote	Remote (drought)
Farm Income					
Gross Farm Income		14,650	54,960	39,780	35,950
Paddy	Planted Area (ha)	0.255	0.130	0.130	0.130
	Production	1,078	676	676	676
	Gross Income	10,009	6,276	6,276	6,276
Wheat	Planted Area (ha)	0.208			
	Production	414			
	Gross Income	3,411			
Maize	Planted Area (ha)	0.005			
	Production	8			
	Gross Income	59			
Mustard	Planted Area (ha)	0.013			
	Production	8			
	Gross Income	132			
Potatoes	Planted Area (ha)	0.013	0.065		
	Production	130	845		
	Gross Income	912	5,915		
E.L. Potatoes	Planted Area (ha)		0.065	0.065	0.065
	Production		715	715	715
	Gross Income		5,005	5,005	5,005
Legumes	Planted Area (ha)	0.008		0.065	0.065
	Production	11		98	58
	Gross Income	127		1,170	693
Vegetables	Planted Area (ha)		0.325	0.260	0.260
	Production		4,940	3,770	3,152
	Gross Income		37,762	27,331	23,972
Livestock Income		1,780	1,780	1,780	1,780
Total Farm Income		16,430	56,740	41,560	37,730
Non Farm Income		19,260	19,260	19,260	19,260
Gross Family Income		35,690	76,000	60,820	56,990
Production Cost (Farm Expense)		4,510	11,904	9,978	9,978
Living Expense **		29,900	37,840	37,840	37,840
Net Reserve		1,280	26,256	13,002	9,172
<hr/>					
Per Capita Monthly Income		504	1,073	859	805
(Increment ratio between without and with)			(113%)	(70%)	(60%)
Net Farm Income ***		31,180	64,096	50,842	47,012
(Increment ratio between without and with)			(106%)	(63%)	(51%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (10/13)

(Unit : NRs.)

Scheme		AL-10 Kotkhu		
Holding Size (ha)		0.19		
No. of Family		5.3		
		Without Project *	With Project	
			Intensive	Remote
Farm Income				
Gross Farm Income		10,880	49,430	29,740
Paddy	Planted Area (ha)	0.175	0.095	0.095
	Production	739	494	494
	Gross Income	6,866	4,587	4,587
Wheat	Planted Area (ha)	0.125		
	Production	250		
	Gross Income	2,057		
Maize	Planted Area (ha)	0.011		
	Production	17		
	Gross Income	129		
Mustard	Planted Area (ha)	0.023		
	Production	14		
	Gross Income	231		
Potatoes	Planted Area (ha)	0.023	0.048	0.048
	Production	228	618	618
	Gross Income	1,599	4,323	4,323
E.L. Potatoes	Planted Area (ha)		0.095	
	Production		1,046	
	Gross Income		7,316	
Legumes	Planted Area (ha)			0.048
	Production			71
	Gross Income			855
Vegetables	Planted Area (ha)		0.285	0.190
	Production		4,560	2,755
	Gross Income		33,201	19,973
Livestock Income		590	590	590
Total Farm Income		11,470	50,020	30,330
Non Farm Income		19,750	19,750	19,750
Gross Family Income		31,220	69,770	50,080
Production Cost (Farm Expense)		3,300	11,249	7,292
Living Expense **		26,860	33,980	33,980
Net Reserve		1,060	24,541	8,808
<hr/>				
Per Capita Monthly Income		491	1,097	787
(Increment ratio between without and with)			(123%)	(60%)
Net Farm Income ***		27,920	58,521	42,788
(Increment ratio between without and with)			(110%)	(53%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (11/13)

(Unit : NRs.)

Scheme		AL-13 Lubhu		
Holding Size (ha)		0.23		
No. of Family		6.2		
		Without Project *	With Project	
			Intensive	Remote (drought)
Farm Income				
Gross Farm Income		12,470	48,620	35,190
Paddy	Planted Area (ha)	0.214	0.115	0.115
	Production	905	598	598
	Gross Income	8,402	5,552	5,552
Wheat	Planted Area (ha)	0.150		
	Production	298		
	Gross Income	2,452		
Maize	Planted Area (ha)	0.012		
	Production	17		
	Gross Income	130		
Mustard	Planted Area (ha)	0.012		
	Production	7		
	Gross Income	116		
Potatoes	Planted Area (ha)	0.012	0.058	
	Production	115	748	
	Gross Income	807	5,233	
E.L. Potatoes	Planted Area (ha)		0.058	0.058
	Production		633	633
	Gross Income		4,428	4,428
Legumes	Planted Area (ha)	0.035		0.058
	Production	47		86
	Gross Income	563		1,035
Vegetables	Planted Area (ha)		0.288	0.230
	Production		4,370	3,335
	Gross Income		33,405	24,178
Livestock Income				
Total Farm Income		12,470	48,620	35,190
Non Farm Income		23,100	23,100	23,100
Gross Family Income		35,570	71,720	58,290
Production Cost (Farm Expense)		3,740	10,530	8,827
Living Expense **		27,640	31,790	31,790
Net Reserve		4,190	29,400	17,673
<hr/>				
Per Capita Monthly Income		478	964	783
(Increment ratio between without and with)			(102%)	(64%)
Net Farm Income ***		31,830	61,190	49,463
(Increment ratio between without and with)			(92%)	(55%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (12/13)

(Unit : NRs.)

Scheme		AL-19 Thika Bhairaw-(I)		
Holding Size (ha)		0.25		
No. of Family		5.8		
		Without Project *	With Project	
			Intensive	Remote
				Remote (drought)
Farm Income				
Gross Farm Income		13,830	65,030	39,130
Paddy	Planted Area (ha)	0.218	0.125	0.125
	Production	920	650	650
	Gross Income	8,543	6,035	6,035
Wheat	Planted Area (ha)	0.188		
	Production	373		
	Gross Income	3,075		
Maize	Planted Area (ha)	0.028		
	Production	40		
	Gross Income	310		
Mustard	Planted Area (ha)	0.020		
	Production	12		
	Gross Income	203		
Potatoes	Planted Area (ha)	0.023	0.063	0.063
	Production	225	813	813
	Gross Income	1,578	5,688	5,688
E.L. Potatoes	Planted Area (ha)		0.125	
	Production		1,376	
	Gross Income		9,626	
Legumes	Planted Area (ha)	0.008		0.063
	Production	10		94
	Gross Income	122		1,125
Vegetables	Planted Area (ha)		0.375	0.250
	Production		6,000	3,625
	Gross Income		43,685	26,280
Livestock Income		630	630	630
Total Farm Income		14,460	65,660	39,760
Non Farm Income		21,610	21,610	21,610
Gross Family Income		36,070	87,270	61,370
Production Cost (Farm Expense)		4,290	14,801	9,594
Living Expense **		30,740	36,980	36,980
Net Reserve		1,040	35,489	14,796
<hr/>				
Per Capita Monthly Income		518	1,254	882
(Increment ratio between without and with)			(142%)	(70%)
Net Farm Income ***		31,780	72,469	51,776
(Increment ratio between without and with)			(128%)	(63%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 14 Farm Budget of Typical Farm in Each Scheme (13/13)

(Unit : NRs.)

Scheme		AL-20 Thika Bhairaw-(II)		
Holding Size (ha)		0.13		
No. of Family		5.9		
		Without Project *	With Project	
			Intensive	Remote (drought)
Farm Income				
Gross Farm Income		7,160	33,820	20,350
Paddy	Planted Area (ha)	0.127	0.065	0.065
	Production	539	338	338
	Gross Income	5,004	3,138	3,138
Wheat	Planted Area (ha)	0.111		
	Production	220		
	Gross Income	1,812		
Maize	Planted Area (ha)			
	Production			
	Gross Income			
Mustard	Planted Area (ha)	0.003		
	Production	2		
	Gross Income	26		
Potatoes	Planted Area (ha)	0.004	0.033	0.033
	Production	39	423	423
	Gross Income	274	2,958	2,958
E.L. Potatoes	Planted Area (ha)		0.065	
	Production		716	
	Gross Income		5,006	
Legumes	Planted Area (ha)	0.003		0.033
	Production	4		49
	Gross Income	42		585
Vegetables	Planted Area (ha)		0.195	0.130
	Production		3,120	1,885
	Gross Income		22,716	13,666
Livestock Income		330	330	330
Total Farm Income		7,490	34,150	20,680
Non Farm Income		27,100	27,100	27,100
Gross Family Income		34,590	61,250	47,780
Production Cost (Farm Expense)		2,230	7,697	4,989
Living Expense **		30,980	37,620	37,620
Net Reserve		1,380	15,933	5,171
<hr/>				
Per Capita Monthly Income		489	865	675
(Increment ratio between without and with)			(77%)	(38%)
Net Farm Income ***		32,360	53,553	42,791
(Increment ratio between without and with)			(65%)	(32%)

Remarks :

* : Farm Survey, JICA Study Team, 1994.

** : Estimated 100 % of Present Situation for "Without Project Condition" and 115 % of Present situation for "With Project Condition".

*** : Net Farm Income = Gross Farm Income - Production Cost.

Table 6 - 15 Farm Budget of Typical Farm in the Project Areas

(Unit : NRS.)

Scheme No.	AK-04	AK-05	AK-07	AK-14	AK-25	AB-02	AB-10	AB-12	AB-14	AL-10	AL-13	AL-19	AL-20
Farm Size	0.41	0.28	0.28	0.37	0.27	0.19	0.24	0.30	0.26	0.19	0.23	0.25	0.13
Ave. Family No.	5.9	5.6	5.9	5.7	6.4	6.0	5.9	5.6	5.9	5.3	6.2	5.8	5.9

Without Project

Farm Income	30,950	18,520	20,720	26,910	21,940	14,080	17,610	24,480	16,430	11,470	12,470	14,460	7,490
Non Farm Income	19,790	18,560	19,770	25,800	29,400	20,270	25,890	18,560	19,260	19,750	23,100	21,610	27,100
<i>Total Income</i>	50,740	37,080	40,490	52,710	51,340	34,350	43,500	43,040	35,690	31,220	35,570	36,070	34,590
Farm Expense	7,340	4,820	3,810	7,300	6,700	3,470	4,490	5,690	4,510	3,300	3,740	4,290	2,230
Living Expense	30,680	28,860	30,410	29,640	32,990	30,300	29,890	31,520	29,900	26,860	27,640	30,740	30,980
Reserve	12,720	3,400	6,270	15,770	11,650	580	9,120	5,830	1,280	1,060	4,190	1,040	1,380

With Project

Intensive area

Farm Income	113,800	74,940	78,620	99,350	71,750	52,220	53,660	69,370	56,740	50,020	48,620	65,660	34,150
Non Farm Income	19,790	18,560	19,770	25,800	29,400	20,270	25,890	18,560	19,260	19,750	23,100	21,610	27,100
<i>Total Income</i>	133,590	93,500	98,390	125,150	101,150	72,490	79,550	87,930	76,000	69,770	71,720	87,270	61,250
Farm Expense	24,274	16,577	16,577	21,906	15,985	11,249	10,988	13,375	11,904	11,249	10,530	14,801	7,697
Living Expense	35,280	33,190	34,970	34,090	37,940	35,570	34,370	36,250	37,840	33,980	31,790	36,980	37,620
Reserve	74,036	43,733	46,843	69,154	47,225	25,671	34,192	38,305	26,256	24,541	29,400	35,489	15,933
(Increment)	61,316	40,333	40,573	53,384	35,575	25,091	25,072	32,475	24,976	23,481	25,210	34,449	14,553

Remote area

Farm Income	71,320	45,920	49,600	61,010	43,770	32,530	39,650	51,860	41,560	30,330	35,190	39,760	20,680
Non Farm Income	19,790	18,560	19,770	25,800	29,400	20,270	25,890	18,560	19,260	19,750	23,100	21,610	27,100
<i>Total Income</i>	91,110	64,480	69,370	86,810	73,170	52,800	65,540	70,420	60,820	50,080	58,290	61,370	47,780
Farm Expense	15,735	10,746	10,746	14,200	10,362	7,292	9,211	11,513	9,978	7,292	8,827	9,594	4,989
Living Expense	35,280	33,190	34,970	34,090	37,940	35,570	34,370	36,250	37,840	33,980	31,790	36,980	37,620
Reserve	40,095	20,544	23,654	38,520	24,868	9,938	21,959	22,657	13,002	8,808	17,673	14,796	5,171
(Increment)	27,375	17,144	17,384	22,750	13,218	9,358	12,839	16,827	11,722	7,748	13,483	13,756	3,791

Remote area (drought)

Farm Income	36,110	47,440	37,730
Non Farm Income	25,890	18,560	19,260
<i>Total Income</i>	62,000	66,000	56,990
Farm Expense	9,211	11,513	9,978
Living Expense	34,370	36,250	37,840
Reserve	18,419	18,237	9,172
(Increment)	9,299	12,407	7,892