Government of Nepal Ministry of Irrigation

Department of Irrigation Irrigation and Water Resources Management Project (IWRMP)

Irrigation Infrastructures Development & Improvement (AF), Component-A (Word Bank Project ID: P144474)

SUBPROJECT COMPLETION REPORT Gamkhola Kholtepani, Surkhet

CMS Engineering Consult Pvt. Ltd. Full Bright Consultancy Pvt. Ltd. JV

June 2018 / Asar 2075

IWRMP (AF) - COMPONENT A Gamkhola Kholtepani Subproject Completion Report

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E Land Donation Records	✓
F ISF Collection Plan	√

IWRMP (AF) - COMPONENT A Gamkhola Kholtepani Subproject Completion Report

Name of Subproject	Gamkhola Kholtepani	Ecological	Belt F					
		<u> </u>						
municipality & ward No(s)	LekhBeshi Municipality wd no 6	District	Surkhet					
SUBPROJECT DESCRIPTION								
Brief Description of Subpr	oject							
This sub-project lies some 27 Km to the east of Birendranagar, along the Dhulibit Bhedabari road in Lekhbeshi Munacipality wad no 6 of Surkhet district. This sub-project was approved for implementation on 27-11-2071 by project implementation coordination committee of Dol (PICC) This sub-project is a rehabilitation type and was in operation since very long. The intake is at foot hill with steep slope and users were introuble to feed the canal specially in rainy season. There was a huge seepage loss and users could not irrigate their field in winter and spring season. However, some irrigation was possible in rainy season to grow rice. Usres of the area approached the IDD Surkhet for the solution of their problem and IDD surkhet assumed the responsibility to help the under IWRMP fund and this sub-project is the resulted.								
Size of Command Area	Gross	46 ha	Net	40 ha				
Location of Centre of Com	<u> </u>		5.00 " 0.00 "					
Distance from Command A	Area to:							
nearest road access	sible by jeep/tractor			0 km				
nearest paved road				22 km				
nearest urban centre	e/market (name) Bi	rendranagar		27 km				
nearest local IDD/ID	SD/GWIDD office (name)	D Surkhet		27 km				
nearest local DADO	office (name) D	ADDO Surkhet		27 km				
Source(s) of Irrigation Wat	ter Supply							
Source Reference	Location of Headworks	Measu	red Flow	Comments				
1 Name Gumkhola	N 28° 21'	55.00" 407	7 lps					
Туре	E 81° 53'	10.00 " 30 De	c 14 date					
2 Name	N	"	lps					
Туре	E,,	"	date					
3 Name	N 0 1	"	lps					
Туре		"	date					

IWMRP INTERVENTION Irrigation Water Supply Source **Target Supply Actual Flow Rate Measurements** 105 l/s 20 l/s 06 May 17 date 1 date l/s 2 l/s l/s date date l/s 3 l/s l/s date l/s date 105 l/s 20 l/s 0 l/s Total Duty 2.625 l/s/ha 0.500 l/s/ha l/s/ha Infrastructure Development Works under IWRMP Quantity Name and Description of Structure Planned in DFSR **Key Dimensions** Constructed Intake 23m long core wall 1 1 10m long 1.3 m **Desilting Basin** 1 1 wide and 1 m deep Super passage 3m wide 1 1 **RCC Lining** 1649m in length 1 1 Maintenance of RRM Lining 860m in length 1 1 Gabion Wall 70m in length 1 1 150 mm dia 70m in Pipe line Work 1 1 length Widening of Tunnel 21m in length 1 1

Infrastructure Development Works under IWRMP (continued)

·	,	<u>Quantity</u>			
Name and Description of Structure	Key Dimensions	Planned in DFSR	Constructed		
Financial Summary (all figures in NPR)	Approved Estimate	Contract Value	Final Value		
[A] Civil Works	Approvod Zolimato	Contract value	i ilai valao		
NCB (All Packages)	7,868,659	7,647,659	7,559,262		
WUA Payable (All Packages)	2,066,798	2,066,798	2,066,798		
WUA Contribution (All Packages)	1,080,900	1,080,900	1,080,900		
Subtotal	11,016,356	10,795,356	10,706,960		
[B] Coningencies (All NCB Packages)				
Physical	998,202				
Price Escalation	998,202				
Other (5%)	499,101	412,878	412,878		
Subtotal	2,495,505	412,878	412,878		
[C] Miscalleneous Items	94,275				
[D] SEMP	670,000				
Total Expenditure [A]+[B]+[C]+[D]	14,276,136	11,208,234	11,119,838		
Calculation of Dol/WUA Contribution	s				
Total Dol Works	13,195,236	10,127,335	10,038,938		
WUA Net Cash Contribution*					
Net Dol Contribution	13,195,236	10,127,335	10,038,938		
WUA Contribution Contracts (All)	1,080,900	1,080,900	1,080,900		
Total Dol+WUA Contributions	14,276,136	11,208,234	11,119,838		
Total WUA Contribution	1,080,900	1,080,900	1,080,900		
Overall Effective WUA Contribution	7.6%	9.6%	9.7%		

(* where appropriate)

WATER MANAGEMENT

Description of How the PI	ysical Water Distribution	System Operates
----------------------------------	---------------------------	------------------------

The physical water distribution system ie outlets are built from Main and distribution system as a pipe hole or cut on the bank. Water application is rotation wise time bound, that is, one has to irrigate the specified land in time allocated to him.

Description of How Farmers Share the Water Among Themselves

Farmers irrigate their land on rotation basis. The irrigation practice is 'discharge based on time'. One has to irrigate the specified area of land within given time.

Desciption of Field Application Methods Being Used

Water application method is predominantly 'wild flooding' but farmers are now aware of scarcity of water and have started 'sprinkler irrigation' in areas where water head permits.

	WATER	R USERS AS	SOCIATION				
Participation	Total	Men	Women	Janajati	Dalit	Other	
Number of Households	125						
Total Population No	687	350	337	349	66	272	
%		51%	49%	51%	10%	40%	
WUA Executive Committee No	11	7	4	6	2	3	
%		64%	36%	55%	18%	27%	
Number of Traing Events	9]					
WUA Training Participation No	217	121	96	88	39	90	
%		56%	44%	41%	18%	41%	
Date of WUA Registration Date of WUA Subproject Agreement with Dol day month year 5 10 2069							
Date of WUA Subproject Agreement with Doi							

Observations on WUA Organisation, Rules, Regulations and Conflict Resolution

Mushroom farming for identified target groups (GVCD) is implemented with allocated budget of five hundred thousand rupees. Social harmony is very good here. Rules & regulations to run the system smoothly are formulated and practiced .There is a very good system of reaching consensuswhile deciding matters of great importance. There is no any conflict of interests among users till date and in case If any occurs, they resolve it by comprehensive interaction and discussion among them.. WUA is active and performs regular monthly meeting in its own office.

Observations on WUA Organisation of Operation and Maintenance (see also Annex F)

WUA organization is active. Canal construction work is completed. ISFcollection plan is recently prepared and users are practicing it. They seem rather confused in mantaining accounts, mobilizing resources, formulating annual plan. So there is a need of training to build confidences among usersto mobilize resources, operate and maintenan the canal system and formulate plan. The usesr community is united ,if guided ,can solve all problems likrly to occur in near future. WUA has appointed responsible users/farmers to monitor the system regularly on turn basis for smooth operation and maintenance. They raise ISF required to pay wages to workers and remuneration to water guards on the basis of irrigated area

		AGRIC	ULTUR	E EXTENSION	ON AND TRA	AINING		
Participation		-	Total	Men	Women	Janajati	Dalit	Other
Tota	al Popula	ition No	687	350	337	349	66	272
		%		51%	49%	51%	10%	40%
Number of T	raing Eve	ents	3					
Participan	ts in Traiı	ning No	86	35	51	41	5	40
		%		41%	59%	48%	6%	47%
Productivity	DFSF Area	R Baseline Productivity		t Available D Productivity		nter FY of da Gr Income		Net Income
	(ha)	(t/ha)	(ha)	(t/ha)	(NRs/t)	(NRs/ha)	(NRs/ha)	(NRs/ha)
Spring Paddy						0		0
	Inc	rease in Prod	ductivity	-				
Paddy	32 Inc	3.50 rease in Prod		3.52 1%	20,935	73,691	53,550	20,141
Wheat	15 Inc	2.85 rease in Prod		2.90 2%	22,107	64,110	47,200	16,910
Maize	6	2.65 rease in Prod	10	2.73 3%	20,000	54,600	36,750	17,850
Potato	7	15.30	-	16.00	23,000	368,000	211,540	156,460
rotato		rease in Prod		5%	25,000	300,000	211,540	130,400
Pulses	Inc	rease in Prod	5 ductivity	0.55	120,000	66,000	25,000	41,000
Oilseed	6	0.68	7	0.70	135,000	94,500	25,000	69,500
	Inc	rease in Prod	ductivity	3%				
Vegetables	Inc	rease in Prod	3 ductivity	15.50 -	26,500	410,750	165,340	245,410
Other		10000 1111 100	adouvity			0		0
G	Inc	rease in Prod	ductivity	-				
				Tot	al ISP Net In	come (NRs)		4,009,737
	0	verall Net Ind	come per	hectare of C	Command Ar	ea (NRs/ha)		100,243
Command Area Performance				DESD I	Baseline	Torac	. +	Latest
Cropping Intens	itv				165%	Targe 248%		238%
	•	Lwith Improv	ad Saad		100 /0	240%	·	
% Cropped Area		•		<u> </u>				80%
% Farmers Using Improved Techniques								60%

Adoption of Improved Crop Varieties

Spring Paddy	
Paddy	Sukkha-1,2,3,5, Serena Sub-1
Wheat	Dhaulagiri, WK-1204, Swargadwari
Maize	Rampur Composite, Mankamana-3, Arun-2
Potato	Cardinal
Pulses	Khajura-1,2
Oilseed	Bikas, Unnati, Surkhet Local
Vegetables	Cauliflower-Snowcrown, Cabbage-Green Coronet, T-621, Tomato-Manisha, Shres

SOCIAL AND ENVIRONMENTAL MANAGEMENT

Implementation of SEMP Recommendations

SEMP Issue	Location	Mitigation Measure	Compliance	Remarks
Night time management at intake is practically difficult for WUA		Construction was reservoir tank	Yes	
WUA strengthening and capacity building		Pre-construction, construction supervision, and O&M training	Yes	
		Labor based work allocated to the WUA contribution	Yes	
		Percentage of contribution part of work completed	Yes	

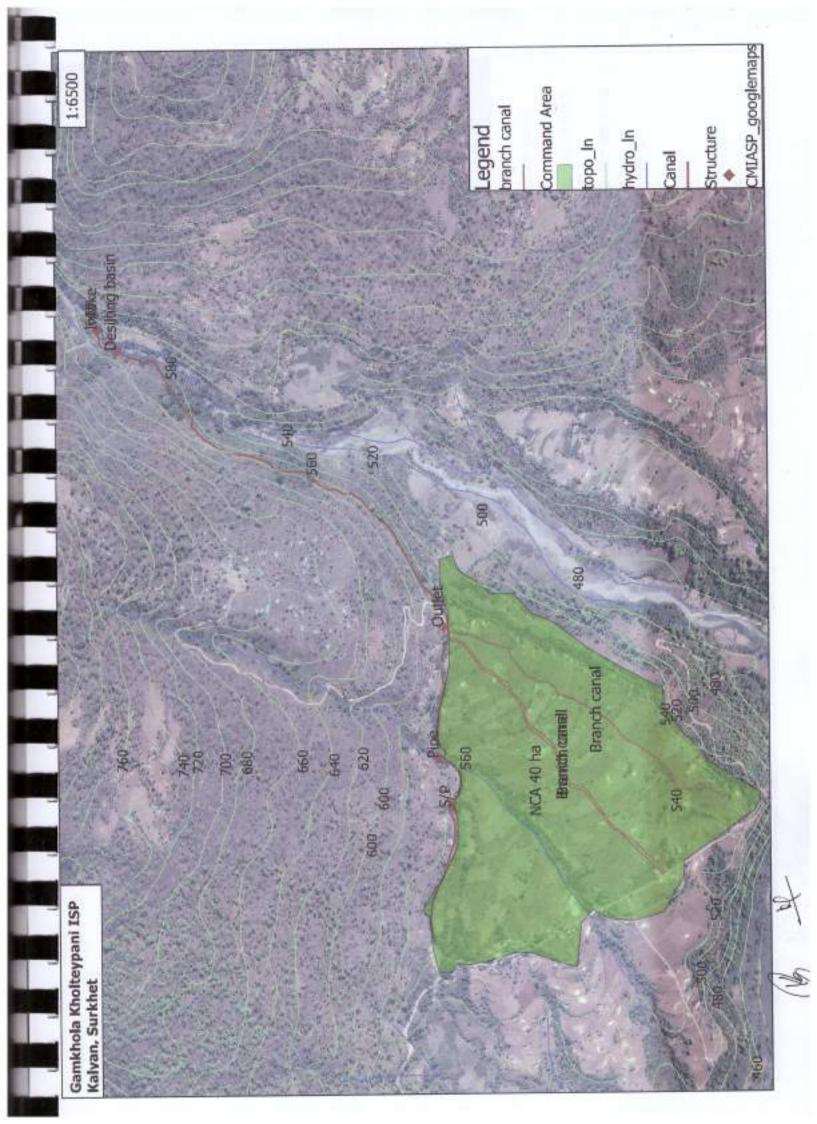
Total Number of Mitigation Measures (not including those no longer relevant)

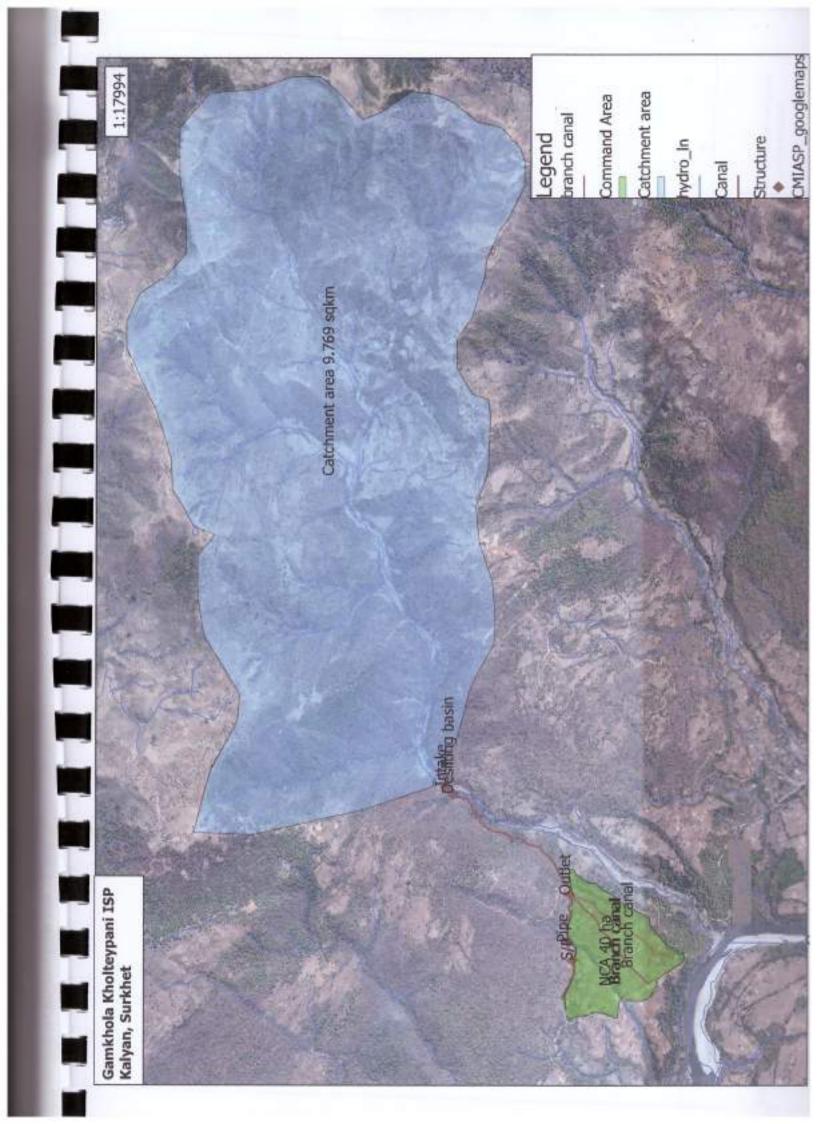
Number of Mitigation Measures Fully Implemented

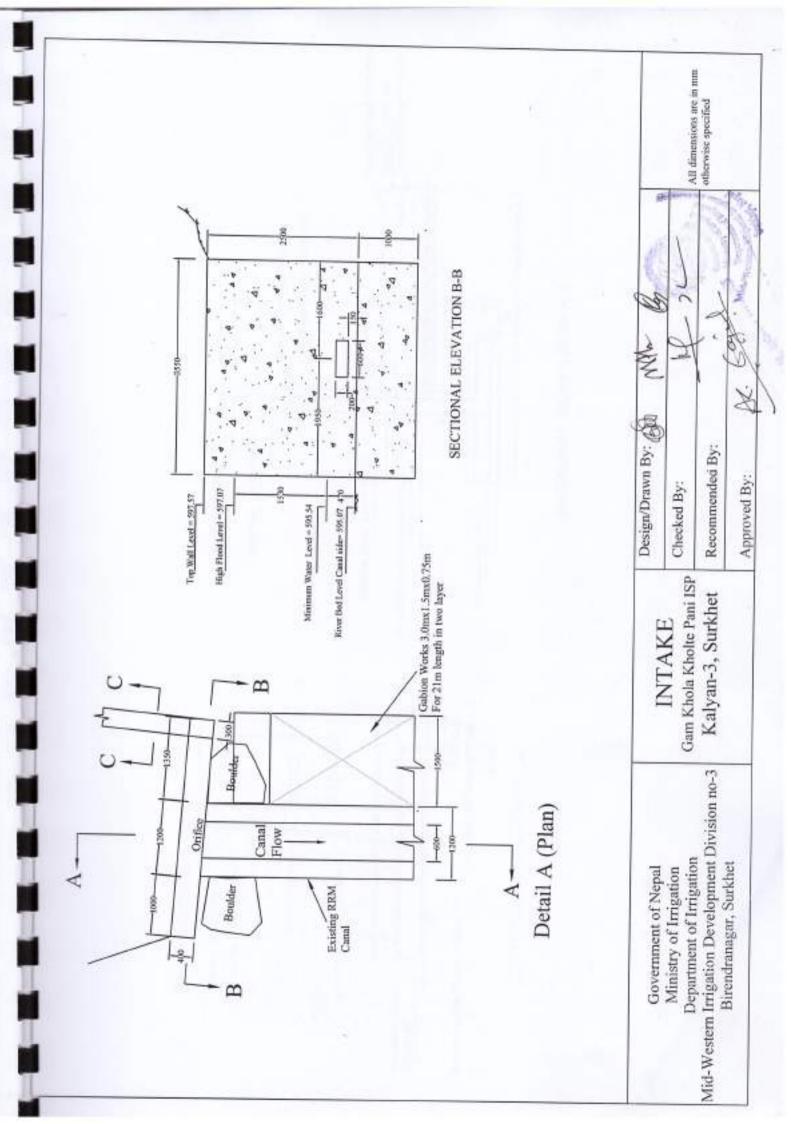
Overall Rate of Compliance

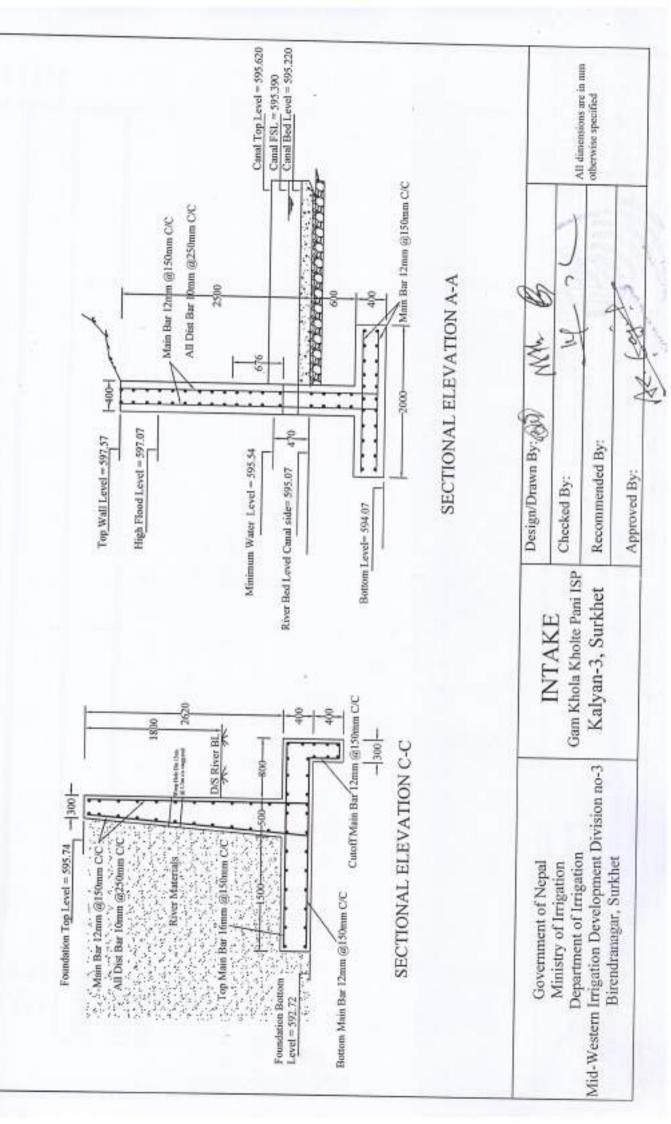
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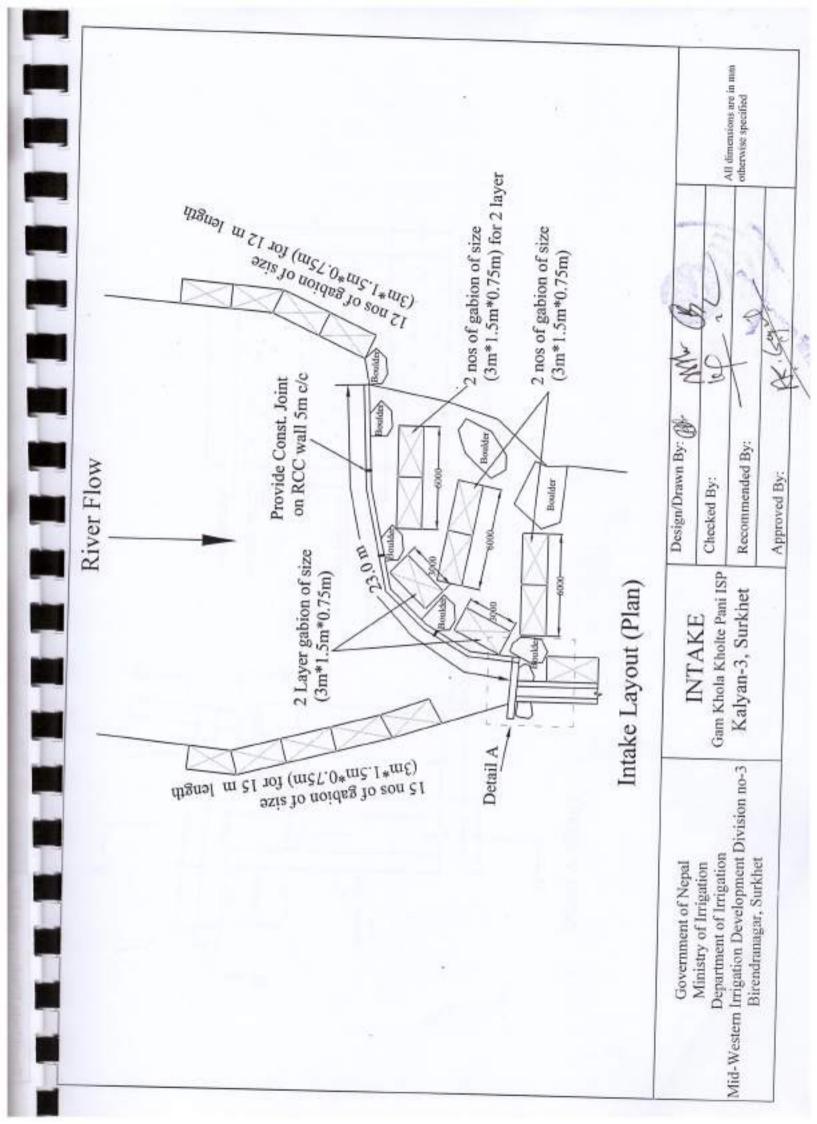
ANNEX A MAPS AND LAYOUT PLANS











Government of Nepal Ministry of Irrigation Department of Irrigation Mid-Western Regional Irrigation Directorate Mid-Western Irrigation Development Divison No - 3 Birendranagar, Surkhet

SCHEMATIC LAYOUT

Name of the project: Gamkhola Kholteypani ISP

Location: Kalyan VDC, Surkhet

0+000	Intake
0+050	Gabion protection
0+065	Desilting basin
0+110	Gabion protection
0+425	Covered slab
0+475	Foot bridge
0+500	Widening of tunnel
0+950	Start of RCC lined canal
1+640	Start of pipe canal
1+700	Start of RCC lined canal
1+750	Superpassage

(8)



ANNEX B

PHOTOGRAPHS













ANNEX C

WUA REGISTRATION DOCUMENT

अनुस्चि-२ (नियम ३ को उपनियम (३) संग सम्बन्धित) नेपाल सरकार

मध्यपश्चिमाञ्चल सिंचाइ विकास डिभिजन नं. ३, सुर्खेते

उपभोक्ता संस्था दर्ता प्रमाण-पत्र नं. :- १९० (११- वीर ०६८)

मिति : २०६९ / १० / 1

उपभोक्ता संस्था दर्ता प्रमाण-पत्र

उपभोक्ता संस्था दर्ता गर्नको लागि त्यस संस्थाले मिति २०६८ १९०१ र मा दिएको दरखास्तको सम्बन्धमा कारवाही हुँदा सिंचाई नियमावली २०४६ को नियम ३ बमोजिम दर्ता गरी यो प्रमाण-पत्र प्रदान गरिएको छ ।

इ. उपभोक्ता संस्थाको पदाधिकारीहरूको नाम : उर्गारिके हिन्द्रा रिमी टे.बा पुन्याउने ।

(क) उम्ह्य क्रिकी राम के रामा (क) उपाध्यक्षिकी पविद्या गामा (मान्यस्थित क्रिकी व्याप्त क्रिकी क्रिकी व्याप्त क्रिकी क्रिकी व्याप्त क्रिकी क्रि

(<u>a</u>) × (<u>a</u>)

(ण) ४. उपभोक्ता संस्थाले उपयोग गर्ने कुलो/कुलेसो/प्रशाखाशाखा नहरः न्ये व्हिटेपान्छी आधित्वी खिटाडू कुन्ती

प्रमाण-पत्र विने अधिकारीको

नाम :- यमेश बहुध अयोल

सही: - lysesmire

पद : कि कि जात प्रमुख

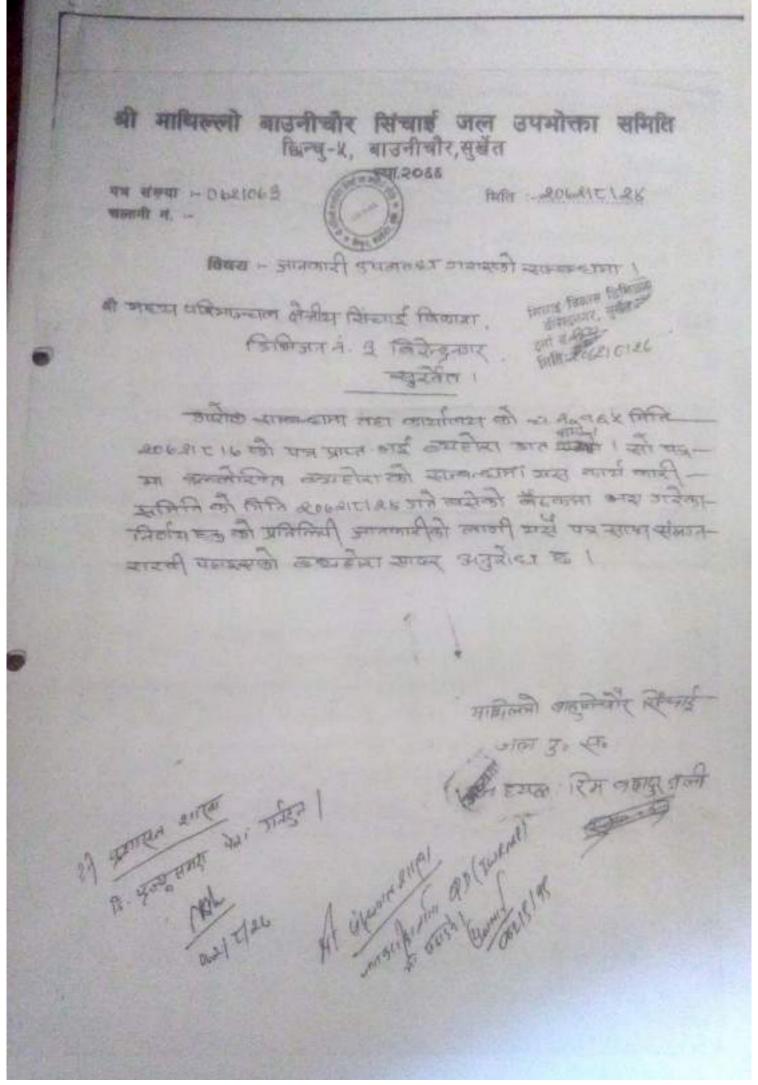
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कार्यालयकी छोप

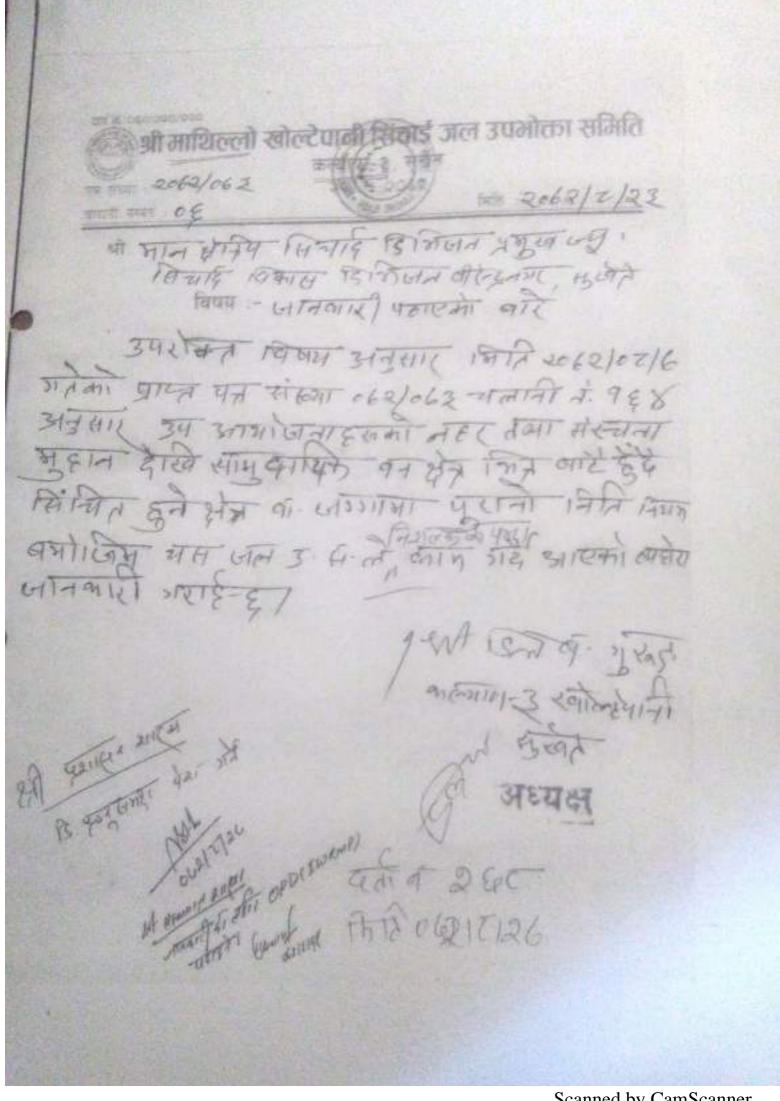
संस्था निकरण

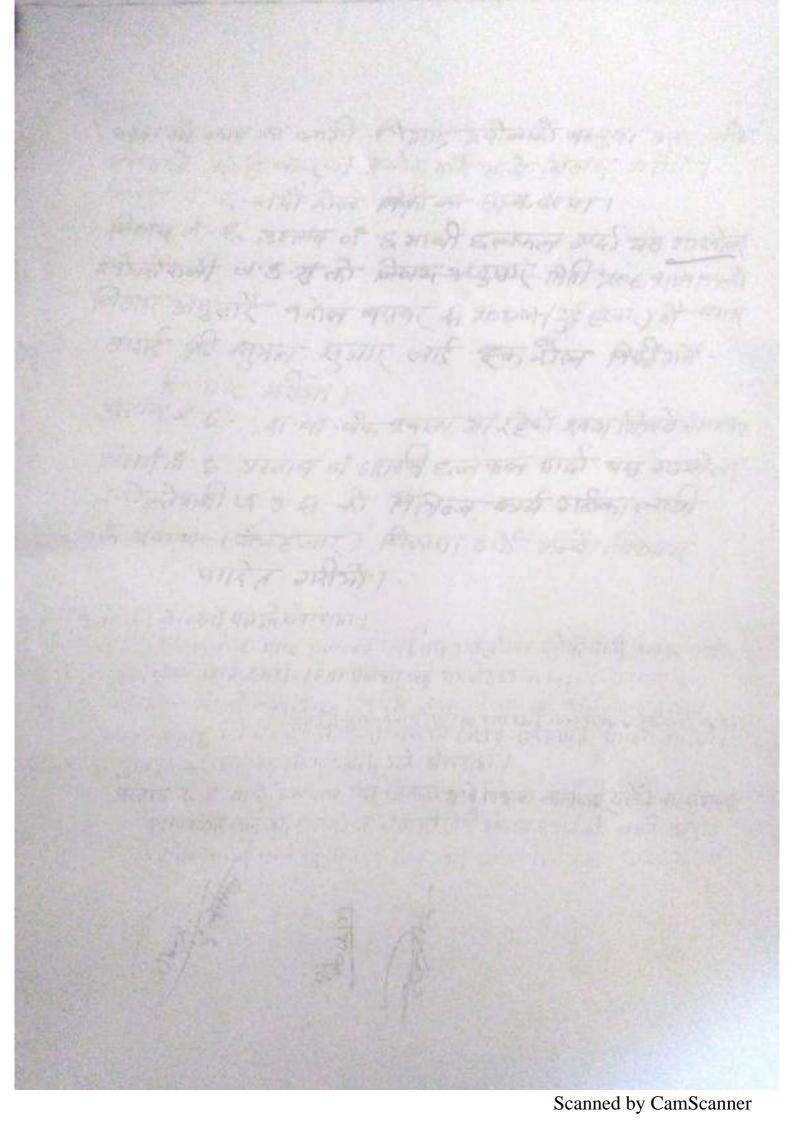
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ANNEX E LAND DONATION RECORDS



wager to n. married summer manya trees by निर्मात तर १ अदलाव में न काचि हत्तामा असी असी MESTING STREET MESTER PRINCES OF LAND TOWNS महिलामा ने - व किने ब्रुवास व्यक्तिको - रह अगहर मिनि 2062 1216 की यत्र अनुसार विकार तथा जता-FOR CONCERNIA STITUTE (INDING) SHOWERS कर्मानका मा रहेकी मान भी आवितस्ती वास्त्रीती विकार कुला हो अल्ला मिर्नामाले लगा भी व्यवस्था पी अध्यास्य के करारे कारणायन अपिराकी के भनि न्ती शिवसमा ज्ञानकारी अपलबका उत्यादने भाति । यमानार व्यक्ते मूका की समन्दामा कार्यकारी मर्गिति मिहर जमि अगायकायम हताल हिला अडिम की Service Contract from Consider to the Constant कालकामा तालिक कात्रकार को कालकातात प्रकारता-स्वाद्ध न देखे दमहीया नहींदेश जायमा कामसमापत मानवाकी तामिकाम मक्तीप्रिक देवेकी क्यादीका नामकारी सामा विक्रिया जिल्ला author (म) करत की व्यामिक्सनी काउनी मेर कि वर्ष दार्गिन में संदर्भ मिर्माणको त्याकी लेश देखी पुरुष दलन असमा व नि भीर सामार्च रहेको (2) अभा क्षेत्रका ४५ हेन्टर (६) यस संयसमा भिर्माण धेत्रमा कन अगल देत्र तपरेकी। (४) करामकावर्षे अञ्चलको लगामी आम मोही हमु वास-क्रान विवाद सरहकी (2) स्ट्यमा मिर्माणाने त्याप्ती भगवद्यानु पर्ते अवना प्राप्त मोहीहरू नात उनिक अई पोर्न नमई विक्र उपलब्दा अर्थ बामाइन क्ष्यानत्त्वा अस्तिम्हा / ६) न्त्रील रहेकी अन्त्री संस्थातामा पमकी गरी रारता मिक्साला डार्ज अवसमा ब्लोर्स अस्तुस्मर अवसा अस्तारकारा है क्षाम मोहिष्क चार उपलब्ध वारावने





ANNEX F

IRRIGATION SERVICE FEE COLLECTION PLAN

Irrigation and Water Resources Management Project (Additional Funding)

O & M Cost and ISF Collection Plan

Subproject: Gamkhol 1. Salient Features of	Finish: Asl	ISP District: Surkhet Construction Start: hadh end 2073
Name of Canal/Structure	Size / No	Critical Features regarding O&M
Side intake with core wall	1	Repeated boulder rolling from u/s of stream on Diversion cutoff.
Main canal	40*40 Cm	Mostly lined and some portion unlined.

Lined Functioning well

No any risk noted

Needs repair

2. Summary of Engineer's Estimate for O & M Cost and ISF Rate:

3

1

15Cm dia.

See attached spreadsheets (Tables A, C, D & F) for details:

- c) Additional funds required by WUA through ISF to meet O&M costs = (a b) = 37,120 NPR
- d) Equivalent rate per ha for ISF 928/ha

3. WUA's Agreed O&M Budget and ISF Rate:

Branch canals

Pipe outlets

Gravel trap

Details of budget agreed with WUA, based on their past experience and summarized in the attached spreadsheet (Tables A, F, G & H).

- a) Agreed Overall O&M budget (including deposits for emergency repairs)............ 1,72,000 NPR

- c) Additional funds required by WUA through ISF to meet O&M costs (= a b) 13000 NPR
- e) Available records, if any, of ISF collection in recent years.no

			NPR '0	00		
Year	Balance at Start of Year	Est. Value of Labour/Kind Contribution	ISF rate(NPR/ha)	Total Amount Collected	Total Expenditure	Balance at End of Year

4. Recommended Annual ISF Collection Rate

ISF Rate (NPR/ha)						
Engineer's Estimate	Currently collected by WUA	Recommended transition from Existing Collection Rate to Engineer's Estimated Rate				
	2073-74	2074-75 2075-76 2076-77 2077-78 2078-79				
928	0	900	1000	1100	1200	1200

In the beginning WUA may not agree collect ISF as per engineer's estimate and should be suggested during discussion to increase ISF rate gradually to meet within 4-5 years so that the surplus amount will be helpful at the time of heavy damage if any in future and also they can benefit from bank interest.

5. <u>ISF Collection Plan as per WUA</u>:

Give details as per discussion with WUA, based on the following checklist.

- a) Timing of payments (before/after harvest). After harvest for ISF and July for non ISF ISF revnue.
- b) Has a person responsible for ISF collection been appointed yet? (Y/N) No
- c) Will the person responsible for ISF collection be remunerated in any way? No

6. Financial Management by WUA

Confirm (from project records) that WUA members have completed the relevant training and financial procedures according to the IDF, namely: no

Phase 1 – Pre-project Implementation

• SN 25 Preparation of annual work program and budgets

Phase 2 – Project Implementation

- SN 6 ISF and other resources collection
- SN 7 Formulation of financial and administrative rules and regulations
- SN8 Auditing
- SN 10 Notice issued on financial activities and public auditing

Phase 3 – Operation and Maintenance

- SN 3 ISF and other resource collection
- SN 6 Establishing canal maintenance fund
- SN 10 Submitting financial details to DoI after end of financial year

IWRMP-AF

Expenditure Model Plan for ISF Collection to Meet O & M Costs

08 July 2017

A Project Details

Name of Irrigation Sub-project (ISP) Gamkhola Kholtepani ISP				
Command Area	40	ha		
Number of Households	125	Nos		
Population	687	Nos		

B Estimated Cost of Civil Works 9,806,000 NPR

C Engineer's estimate for Annual O&M Costs

Description	Rate	Amount(NPR)
Engineer's estimate for overall O&M cost of sub-project	2%	196,120.00
a) Operation cost includes the following		
- Office rent and furnitures	400000	40000
- Stationary	5000	5000
- WUA Renewal cost	100	100
- WUA audit cost	10000	10000
- WUA G assembly/ election cost	2000	2000
- other office expenses	2000	2000
- Miscellaneous expenses	15000	15000
b) Mainteneance cost includes the following		
- Routine maintenance of H/W and structures including	5000	5000
- Dhalpa/chaoukidar/heralu	4000	50000
- ISF collector remuneration	0	0
- Emergency maintenenace of Canal and structures as	10000	10000
- Miscellaneous expenses(vehicle	42000	42000

D Calculation of ISF based on Engineer's Estimate

Annual amount required for O& M = (Engineer's estimate - WUA income)	37,120.00
ISF rate per ha	928.00
ISF rate per bigha (1ha = 1.48 Bigha)	627.03
ISF rate per kattha (1ha = 29.60 Kattha)	31.35
ISF rate per ropani (1ha = 19.675 Ropani)	47.17

E Estimated Value of Routine Maintenance Activities (supplied as labour)

SN	Description	Quantity (Labor)	Rate	Amount(NPR)
1	Main Canal/structures cleaning (2 times/year)	125	460	57500
2	Intake H/W Diversion (2 times/year)	20	460	9200
2	Branch canal repair/cleaning (2 times/year)	40	460	18400
	Total			85,100

F Expected Sources of Cash Income of WUA

SN	Description	Quantity	Rate	Amount (NPR)
1	Membership Fee	125	300	37,500
2	Defaulter's Fee	5	1,000	5,000
3	Industries (small hydro tarif)	-	-	0
4	Visitor's fee	2	1,000	2,000
5	Agro-mechanical rental of WUA equipments	1	72,000	72,000
6	Profit from Land buy/sell fee	5	1,000	5,000
7	Profit from culture program	1	5,000	5,000
8	Profit fromWUA Training allowance/	30	50	1,500
9	Sand obtained from canal de-silting	5	1,000	5,000
10	Interest of bank deposit		-	0
11	Interest of loan provided to WUA ber	-	-	0
12	Grass of canal bank	1	1,000	1,000
13	Other (irrigation role purchase for new comer other farmers)	1	25,000	25,000
	Total			159,000

G Provisional O&M Budget Agreed with WUA

SN	Description	Quantity	Rate	Amount (NPR)
1	O&M of Headworks	1	20,000	20,000
2	O&M of Main Canals	1	20,000	20,000
3	O&M of Branch Canals	1	10,000	10,000
4	O&M of Flow Control Structures	-	-	0
5	O&M of Bridges, Culverts and Sypho	1	10,000	10,000
6	Remuneration of Dhalpa / Heralu / Chowkidar	2	4,000	50,000
7	Transportion	5	2,000	2,000
8	Office Rent	1	1,000	12,000
9	Office Equipment (incl furniture and	1	34,000	34,000
10	Remuneration for ISF Collector	-	-	0
11	WUA General Assembly	1	2,000	2,000
12	WUA Audit	1	12,000	12,000
13	other			
	Subtotal			172,000
14	Deposit into fund for emergency repa	irs		
	Total			172,000

H Calculation of ISF based on WUA's Agreed Budget

Annual amount required for O& M = (Engineer's estimate - WUA income) -	13,000
ISF rate per ha	325
ISF rate per bigha (1ha = 1.48 bigha)	220
ISF rate per kattha (1ha = 29.60 kattha)	11
ISF rate per ropani (1ha = 19.675 ropani)	17

Note:-

WUA beneficiaries may pay ISF fee in cash, in kind (such as with paddy, wheat, or other crops) or in labour, as agreed by the WUA.