

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
Gartung Khola ISP, Pyuthan

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

June 2018 / Asar 2075

IWRMP (AF) - COMPONENT A
Gartung Khola ISP Subproject Completion Report

CONTENTS

Subproject Description	Page No
Brief Description of Subproject	2
Size of Commad Area	2
Location of Command Area	2
Distance from Command Area to Key Local Destinations	2
Source(s) of Irrigation Water Supply	2
IWRMP Intervention	
Irrigation Water Supply	3
Infrastructure Development Works under IWRMP	3
Financial Summary	4
Water Management	
How the Physical Water Distribution System Operates	5
How Farmers Share Water Among Themselves	5
Field Application Methods	5
Water Users Association	
Participation	5
Date of WUA Registration	5
Date of WUA Subproject Agreement with DoI	5
WUA Organisation Rules, Regulations and Conflict Resolution	5
WUA Organisation of Operation and Maintenance	6
Agriculture Extension and Training	
Participation	6
Productivity	6
Command Area Performance	6
Adoption of Improved Crop Varieties	7
Social and Environmental Management	
Implementation of SEMP Recommendation	7
Annexes	(Tick if Available & Attached)
A Maps and Layout Plans	<input checked="" type="checkbox"/>
B Photos	<input checked="" type="checkbox"/>
C WUA Registration Document	<input checked="" type="checkbox"/>
D WUA / DoI IWRMP Subproject Agreement	<input type="checkbox"/>
E Land Donation Records	<input checked="" type="checkbox"/>
F ISF Collection Plan	<input checked="" type="checkbox"/>

IWRMP (AF) - COMPONENT A
Gartung Khola ISP Subproject Completion Report

Name of Subproject Ecological Belt
Municipality & Ward No(s) District

SUBPROJECT DESCRIPTION

Brief Description of Subproject

Gartung Khola Irrigation Sub-Project is rehab scheme planned to irrigate about 55 ha. land of Jhimruk Rural Municipality- 4 & 5 of Pyuthan District. Which is the east part of Pyuthan. The main canal length is 3.860 km and the command area has good potentiality for intensified farming. Gartung Khola, the perennial source of system, has a sufficient discharge through out the year. Before the intervention of IWRMP, WUs were suffering from poor irrigation system. They were struggling to get water from the system. No permanent structure was at intake side. seepage problem was occurred almost stretch of the canal. Canal breaching and landslide problems were occurred during the every rainy season. The irrigation system used to interrupt by Kholsi at different locations frequently during the rainy season . WUs could t farming on 15-20 hactre land hardly. So their life style was underprivileged.

In the planning stage under IWRMP, the total beneficiaries household were 135 with the population of 1500 and cost of rehabilitation was estimated to be Nrs.20,239,300. After the intervention of IWRMP, the Irrigation system became reliable & sustainable at investment of Nrs.12464297. The Sub-Project was completed on F.Y.2071/2072. After the completion of Sub-Project, WUs started to get year round irrigation facility. They started to grow seasonal, off seasonal crops on planned command area. WUs are now successful to generate more income from their farming practices . Rahabilited irrigation system played vital role to uplift life style of WUs. Finally they are satisfied with the irrigation system and thankful to IDD,DOI and IWRMP too.

Size of Command Area Gross ha Net ha

Location of Centre of Command Area Northing ° ' "
Easting ° ' "

Distance from Command Area to:

nearest road accessible by jeep/tractor km
nearest paved road km
nearest urban centre/market (name) km
nearest local IDD/IDSD/GWIDD office (name) km
nearest local DADO office (name) km

Source(s) of Irrigation Water Supply

Source Reference	Location of Headworks	Measured Flow	Comments
1 Name <input type="text" value="Gartung Khola"/> Type <input type="text" value="Perennial"/>	N <input type="text" value="28"/> ° <input type="text" value="7"/> ' <input type="text" value="30.00"/> " E <input type="text" value="82"/> ° <input type="text" value="57"/> ' <input type="text" value="10.00"/> "	<input type="text" value="130"/> lps <input type="text" value="24 Nov 08"/> date	<input type="text"/>
2 Name <input type="text"/> Type <input type="text"/>	N <input type="text"/> ° <input type="text"/> ' <input type="text"/> " E <input type="text"/> ° <input type="text"/> ' <input type="text"/> "	<input type="text"/> lps <input type="text"/> date	<input type="text"/>
3 Name <input type="text"/> Type <input type="text"/>	N <input type="text"/> ° <input type="text"/> ' <input type="text"/> " E <input type="text"/> ° <input type="text"/> ' <input type="text"/> "	<input type="text"/> lps <input type="text"/> date	<input type="text"/>

IWRMP INTERVENTION

Irrigation Water Supply

Source	Target Supply	Actual Flow Rate Measurements			
1	<input type="text" value="200"/> l/s	<input type="text" value="30"/> l/s	<input type="text" value="25 Apr 18"/> date	<input type="text" value="30"/> l/s	<input type="text" value="25 Apr 18"/> date
2	<input type="text"/> l/s	<input type="text"/> l/s	<input type="text"/> date	<input type="text"/> l/s	<input type="text"/> date
3	<input type="text"/> l/s	<input type="text"/> l/s	<input type="text"/> date	<input type="text"/> l/s	<input type="text"/> date
Total	<input type="text" value="200"/> l/s	<input type="text" value="30"/> l/s		<input type="text" value="30"/> l/s	
Duty	<input type="text" value="3.64"/> l/s/ha	<input type="text" value="0.55"/> l/s/ha		<input type="text" value="1"/> l/s/ha	

Infrastructure Development Works under IWRMP

Name and Description of Structure	Key Dimensions	Quantity	
		Planned in DFSR	Constructed
Intake	1.5 m long	<input type="text" value="1"/>	<input type="text" value="1"/>
Canal Lining/Covered Canal	1400 M length	<input type="text" value="1"/>	<input type="text" value="1"/>
Aqueduct/ Super Passage	3 M long	<input type="text" value="1"/>	<input type="text" value="1"/>
Foot Bridge	1.5 m wide	<input type="text" value="1"/>	<input type="text" value="1"/>
Outlet	3 no	<input type="text" value="3"/>	<input type="text" value="3"/>
Escape	1 m wide	<input type="text" value="1"/>	<input type="text" value="1"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Infrastructure Development Works under IWRMP (continued)

Name and Description of Structure	Key Dimensions	Quantity	
		Planned in DFSR	Constructed

Financial Summary (all figures in NPR)

	Approved Estimate	Contract Value	Final Value
[A] Civil Works			
NCB (All Packages)	11,642,693	7,121,177	7,295,170
WUA Payable (All Packages)	3,116,375	3,116,375	3,126,274
WUA Contribution (All Packages)	1,424,000	1,424,000	1,431,820
<i>Subtotal</i>	16,183,068	11,661,552	11,853,264
[B] Coningencies (All NCB Packages)			
Physical	1,424,013		
Price Escalation	1,424,013		
Other (5%)	712,006	712,006	712,000
<i>Subtotal</i>	3,560,032	712,006	712,000
[C] Miscalleneous Items			
[D] SEMP	375,000	375,000	225,000
Total Expenditure [A]+[B]+[C]+[D]	20,118,100	12,748,558	12,790,264
Calculation of Dol/WUA Contributions			
Total Dol Works	18,694,100	11,324,558	11,358,444
WUA Net Cash Contribution*			
Net Dol Contribution	18,694,100	11,324,558	11,358,444
WUA Contribution Contracts (All)	1,424,000	1,424,000	1,431,820
Total Dol+WUA Contributions	20,118,100	12,748,558	12,790,264
Total WUA Contribution	1,424,000	1,424,000	1,431,820
Overall Effective WUA Contribution	7.1%	11.2%	11.2%

(* where appropriate)

WATER MANAGEMENT

Description of How the Physical Water Distribution System Operates

Water offtakes from source through side intake, No any permanent structure across the source River. Then it flows in main canal and finally the water is released through outlets into their farm as per farmers need .

Description of How Farmers Share the Water Among Themselves

First, WUA prepare the water distribution schedule by discussion with farmers. Then Farmers get water as per their need and during time of low flow of water into the source they get water by rotation method.

Description of Field Application Methods Being Used

The method of water application in field is conventional . i.e. Surface/ Flooding/Control Flooding/ Border Irrigation method specially for paddy crops.

WATER USERS ASSOCIATION

Participation	Total	Men	Women	Janajati	Dalit	Other
Number of Households	135					
Total Population No	1,500	720	780	176	65	1,259
%		48%	52%	12%	4%	84%
WUA Executive Committee No	11	6	5	1	1	9
%		55%	45%	9%	9%	82%
Number of Traing Events	6					
WUA Training Participation No	197	93	104	34	18	145
%		47%	53%	17%	9%	74%

	day	month	year
Date of WUA Registration	7	6	2070
Date of WUA Subproject Agreement with DoI	4	12	2070

Observations on WUA Organisation, Rules, Regulations and Conflict Resolution

No any written rules & regulations are formulated yet but they conduct the system in consensus. If any conflict/ misunderstanding occurs, they resolve it by comprehensive discussion and reaching consensus among WUs. WUA is active and conducts meeting once in a month, has their own office with sign board. The WUA organization is active. construction work is completed. ISF plan is recently prepared but to adopt it ,they need intensive training on operation and maintenance. They also need conflict resolution training to solve likely problems that can emerge in their community. WUA can utilize users/farmers as an canal operators or as maintenance worker for canal operation. There is very good understanding and

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

They maintain their irrigation system periodically as planned and as per need of time. They have formulated rules to raise the funds in the form of ISFor Khara to meet the operational and maintenance expenses on yearly basis and irrigated area. They contribute their labour to clean/clear the entire canal twice in a year in a convenient time before and after the paddy crop.

AGRICULTURE EXTENSION AND TRAINING

Participation	Total	Men	Women	Janajati	Dalit	Other
Total Population No	1,500	720	780	176	65	1,259
%		48%	52%	12%	4%	84%
Number of Traing Events	6					
Participants in Training No	197	93	104	34	18	145
%		47%	53%	17%	9%	74%

Productivity

Productivity	DFSR Baseline		Latest Available Data, FY: <enter FY of data here>					
	Area (ha)	Productivity (t/ha)	Area (ha)	Productivity (t/ha)	Price (NRs/t)	Gr Income (NRs/ha)	Prod Cost (NRs/ha)	Net Income (NRs/ha)
Spring Paddy						0		0
	Increase in Productivity			-				
Paddy	30	2.40	45	4.20	23,000	96,600	68,000	28,600
	Increase in Productivity			75%				
Wheat	8	2.10	20	2.80	25,000	70,000	60,000	10,000
	Increase in Productivity			33%				
Maize	15	2.00	20	2.67	25,000	66,750	58,000	8,750
	Increase in Productivity			34%				
Potato	5	8.00	7	16.00	27,000	432,000	165,000	267,000
	Increase in Productivity			100%				
Pulses	3	0.58	1	0.65	90,900	59,085	36,000	23,085
	Increase in Productivity			12%				
Oilseed	3	0.42	3	0.65	110,000	71,500	33,000	38,500
	Increase in Productivity			55%				
Vegetables	3	8.00	6	13.00	26,900	349,700	140,000	209,700
	Increase in Productivity			63%				
Other						0		0
	Increase in Productivity			-				
Total ISP Net Income (NRs)							4,927,785	
Overall Net Income per hectare of Command Area (NRs/ha)							89,596	

Command Area Performance

	DFSR Baseline	Target	Latest
Cropping Intensity	122%	227%	185%
% Cropped Area Planted with Improved Seed			70%
% Farmers Using Improved Techniques			55%

Adoption of Improved Crop Varieties

Spring Paddy	
Paddy	Meghdoot, Radha-7, Ramdhan, Makwanpur-1
Wheat	Bhirkuti, WK- 1204
Maize	Mankamana-3, Arun-2, Hybrid
Potato	Cardinal, TPS, Kufri Jyoti
Pulses	Local
Oilseed	Local
Vegetables	Cauliflower-Snowcrown, Kathmandu local, Cabbage-Green Coronet, Tomato-Maneesh

SOCIAL AND ENVIRONMENTAL MANAGEMENT**Implementation of SEMP Recommendations**

SEMP Issue	Location	Mitigation Measure	Compliance Remarks	
Impediment of movement of domestic animals/Peoples	at different Chainages	Low cost Foot bridge/Coverd canal	Yes	
Use of chemical fertilizers & Pesticides	Command Area	Organic farming training & Promotion/awarness training	Yes	
Management of stone quarry along canal alignment	U/S & D/S, Canal Alignment	Provision of required haulin distance/WUA will strickly prohibited to extracting RBM	Yes	
Breaching of canal due to overflow in rainy season	at different chainages	Provision of flow control structures/Provision of RCC canal lining	Yes	
Aggravate/Mitigate land slide Problem	at different chainages	Provision of lining, covered canal and retaining structures.	Yes	
Gender Issue	Command Area	Gender & income generation focused training/Exposure visit	Yes	
Employment opportunity for economically backward people	Command Area	Recruitment of backward people in construction activities	Yes	

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

7

Number of Mitigation Measures Fully Implemented

7

Overall Rate of Compliance

100%

ANNEX A

MAPS AND LAYOUT PLANS

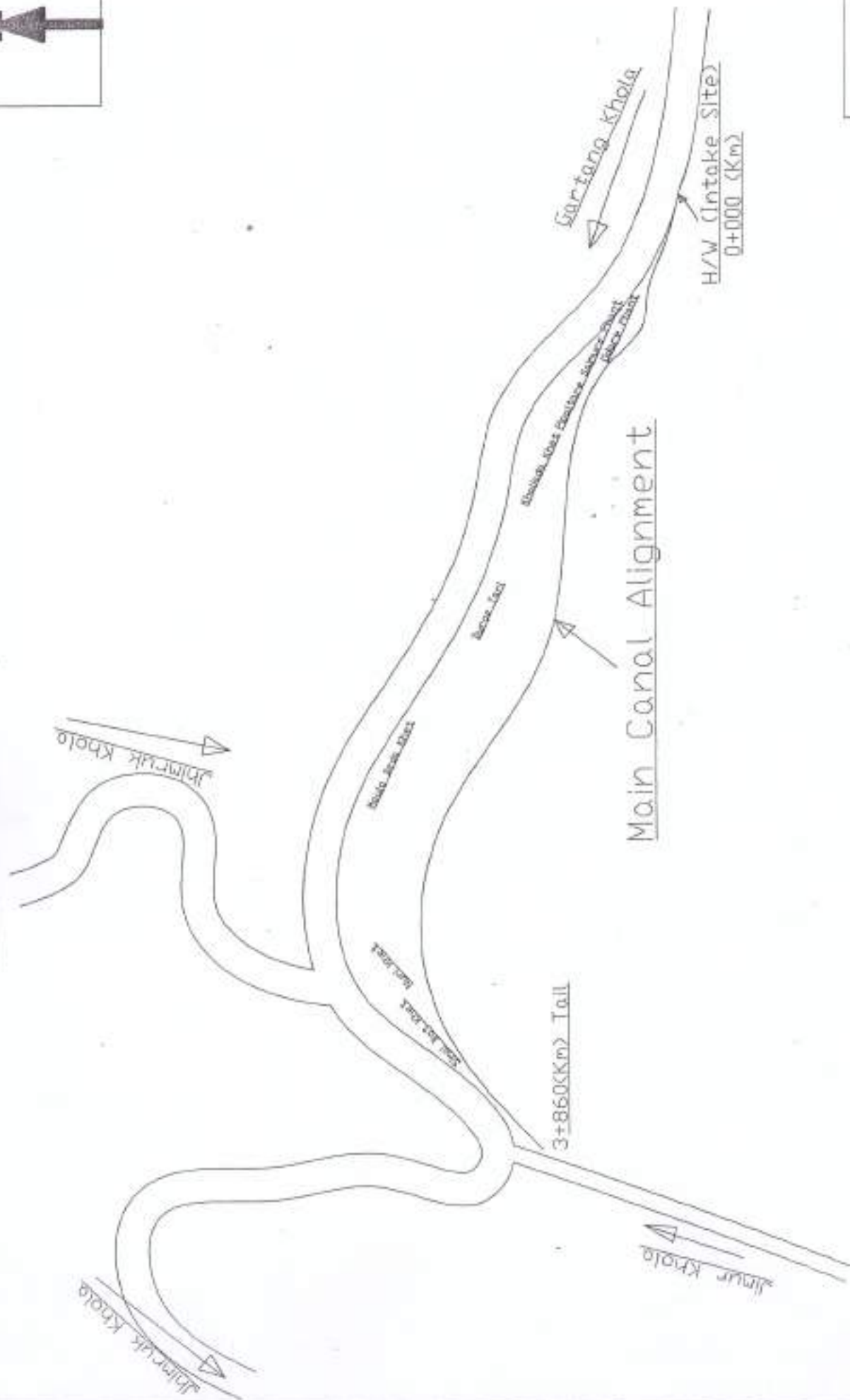
Map of Pyuthan



Gartung Khola I P, Layout Plan



Gartung Irrigation Project, Okharkot, Pyuthan.



Lav Out Plan (Not To Scale)

Drawing No.
2075

GARTUNG IRRIGATION PROJECT
OKHARKOT-7,8,9, PYLUTHAN

CANAL X-SECTIONS
(16)

SCALE

H= 1:200

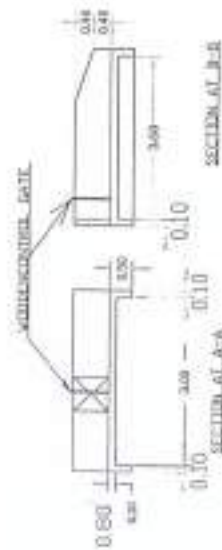
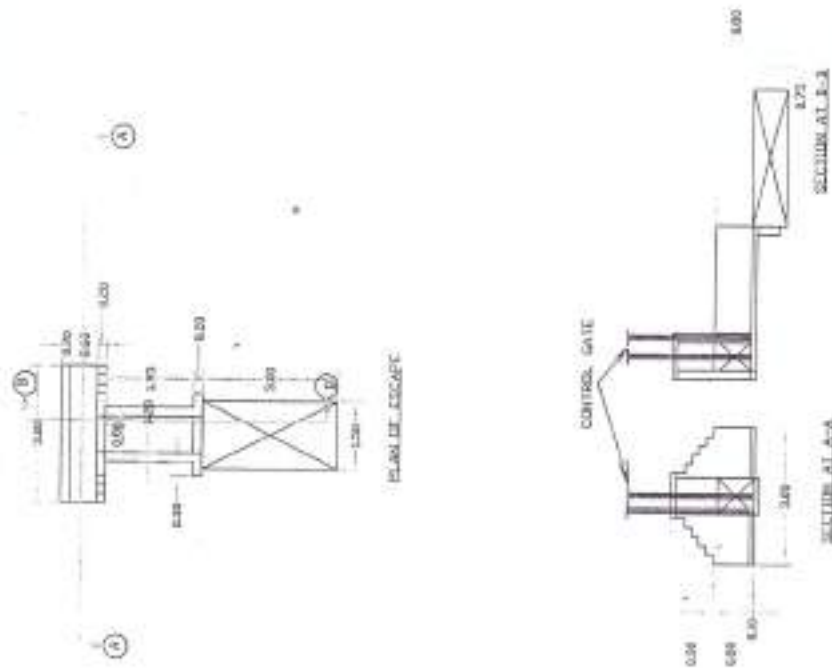
 $V = I \cdot 200$

DRAWN BY:

DESIGNED BY:

CHECKED BY:

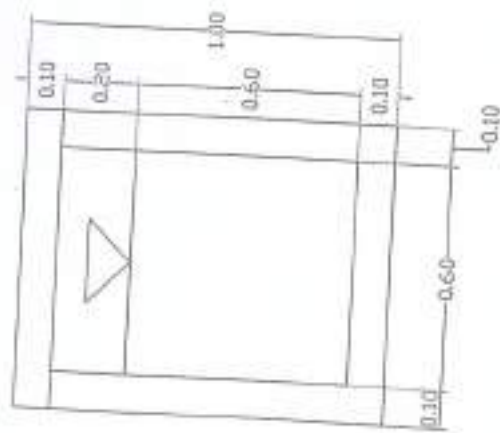
APPROVED BY:



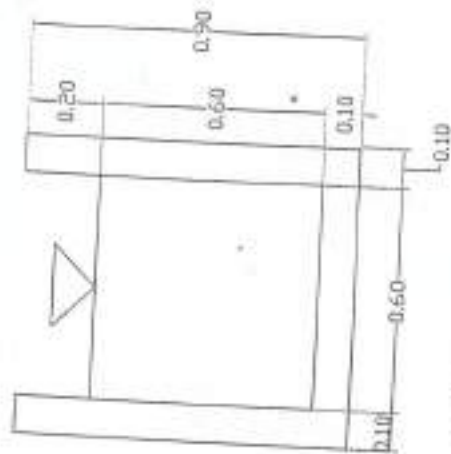
GOVERNMENT OF NEPAL MINISTRY OF WATER RESOURCES DEPARTMENT OF IRRIGATION MID-WESTERN REGIONAL IRRIGATION DIRECTORATE MID-WESTERN IRRIGATION DEVELOPMENT DIVISION NO. 4, PYUTHAN	GARTUNG IRRIGATION PROJECT OKHARKOT, PYUTHAN	 DRAWN BY:	CHECKED BY:
	ESCAPE & OUTLET (03)		DESIGNED BY:

Canal Section Types

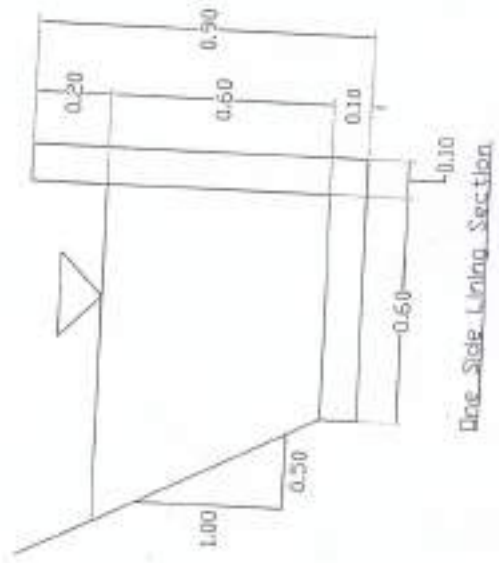
Gartung Irrigation Project, Dkharkot- Pyuthan



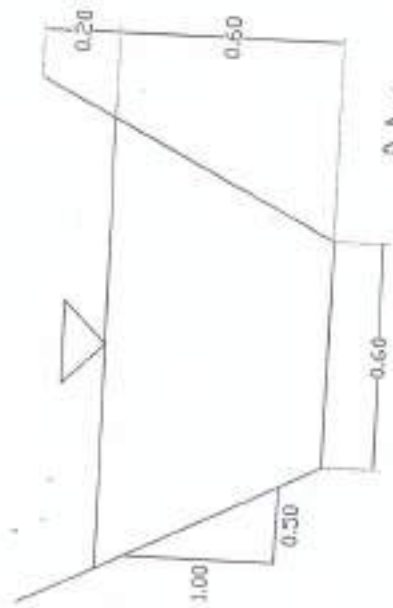
Covered Canal Section



Both Side Lining Section



One Side Lining Section



Earthen Canal Section

ANNEX B

PHOTOGRAPHS

























ANNEX C

WUA REGISTRATION DOCUMENT

अनुसूचि - २
(सिंचाइ नियमावली २०५६ को नियम ३ को उपनियम (३) खँग सम्बन्धित)

नेपाल सरकार
सिंचाइ मन्त्रालय
सिंचाइ विभाग

म.प.सिंचाइ विकास डिभिजन नं. ४

विजुवार प्युठान

उपभोक्ता संस्था :-

दर्ता प्रमाण-पत्र नं. :- ०७/०७०/७९

मिति :- २०७०/०६/०७

उपभोक्ता संस्था दर्ता प्रमाण-पत्र

श्री गर्तङ्ग खोला सिंचाइ कुलो जल उपभोक्ता समिति,
ओखरकोट - ७, ८ र ९ प्युठान ।

उपभोक्ता संस्था दर्ता गर्नको लागि त्यस संस्थाले मिति २०७०/०६/०७ मा दिएको
दरखास्तको सम्बन्धमा कारवाही हुँदा सिंचाइ नियमावली, २०५६ को नियम ३ बमोजिम दर्ता गरी
यो प्रमाण-पत्र प्रदान गरिएको छ ।

१. उपभोक्ता संस्थाको नाम र ठेगाना : श्री गर्तङ्ग खोला सिंचाइ योजना जल उपभोक्ता समिति,
ओखरकोट - ७, ८ र ९ प्युठान ।

२. उपभोक्ता संस्थाको उद्देश्य :- सिंचाइ गरी कृषि उत्पादनमा वृद्धि ल्याउने ।

३. उपभोक्ता संस्थाको पदाधिकारीहरूको नाम :-

- | | |
|------------------|-------------------------------|
| (क) अध्यक्ष : | श्री ज्ञानेन्द्र राज भट्टराई, |
| (ख) उपाध्यक्ष : | श्री यूद्ध विर रायमाभी, |
| (ग) कोषाध्यक्ष : | श्रीमती मनकला जि.सी. |
| (घ) सचिव : | श्री खगेश्वर पोखेल, |
| (ङ) सदस्य : | श्रीमती सारदा जि.सी. |
| (च) " | श्रीमती तुलसा भट्टराई, |
| (छ) " | श्रीमती मिश्रा जि.सी., |
| (ज) " | श्री दोमन्ता रोका मगर, |
| (झ) " | श्री साङ्गले टोमटा, |
| (ञ) " | श्री दामोदर पोखेल, |
| (ट) " | श्री दुण्डी राज पोखेल, |

४. उपभोक्ता संस्थाले उपयोग गर्ने कुलो/कुलेसा/प्रशाखा/शाखा नहर:- गर्तङ्ग खोला सिंचाइ
योजना ।



प्रमाण-पत्र दिने अधिकारीको :-

नाम - चेत प्रसाद गुप्ती

सही :-

पद :- इन्जिनियर

मिति :- २०७०/०६/०७

सिंचाइ विभाग, नेपाल सरकार

००/६/७

नविकरण

20
महानगरपालिका
निकाय
सिपाय
म. प्र. नं.
विभागाध्यक्ष
विभागाध्यक्ष
प्रमुख
२०७२

ANNEX E

LAND DONATION RECORDS

गर्तङ्ग खोला सिंचाई योजना जल उपभोक्ता समिति ओखरकोट-0, ट र ट, प्यूठान

पत्र संख्या : 063/68
चलानी नम्बर 23

स्था : 2000

मिति 2068/9/96
2068/9/95

विषय : निर्माण कार्यको लागि आवश्यक जग्गाको
अपवाञ्छापन बारे ।
श्री सिंचाई विकास डिभिजन, बिजुवा ।

उपरोक्त अपवाञ्छापन गैहको प. नं. 063/68
च. नं. 338 मिति 068/9/95 को पत्र प्राप्त
भएकोले अवगत भयो । योजना निर्माण
गर्दा कुनै पुरानो जग्गाको कतको जग्गा आवश्यक
भएको भएको सार्थक नदिएको देखियो । कसैको
नदानी जग्गा स्वयं अपवाञ्छापन गर्ने व्य
क्ति हुने जग्गा सार्वजनिक योजनाको
हुने निर्देशको बावजुद नदिएको भएकोले
अनुरोध छ ।

श्री. श्री. शर्मा
समिति विकास पञ्चायत
ग. वि. पञ्चायत
2068/9/95



श्री. श्री. शर्मा
श्री. श्री. राज मर्छ
(अध्यक्ष)

④ नहर मार्गको बन्दोबाज मानिने तथा
घाटालुका गतवाहकलाई आवत गत
गर्नेको लागि नहर माथि स्लाप राख्ने गरिने
भन्ना गरियो ।

⑤ योजना सम्पन्न गर्दा मुद्दा क्षेत्रमा बाँध पक्का
गर्न २ विमशा योजना पारी चुहिएर गतिलमाथि
रेडकोले नहर पक्का गर्न गरिने भन्ना गरियो ।
शान्ति आवश्यकता देरी निर्मित बाँधहरूमा लक्ष्मी
गर्न निर्णय गरियो ।

⑥ योजना निर्माण गर्दा मुद्दा क्षेत्र माथि
२ तल्ला लिचार्ड पुर्णालीहरूमा पारी सम्पुर्ण
कुनै बाधनिक नदेख्ने

⑦ योजना निर्माण गर्दा कतिका बा नहर मार्गमा
परेका डल्लोलाहरू आफ्नै सरसल्लाह गरी नहर
मार्गमा परेका घाटाललाई झीर नपुर्गार्ने आवश्यकता
देरी पक्का गर्न निर्णय गरियो ।

⑧ योजना सम्पन्नमा काम शुरू गर्न गरिने
भन्ना गरियो ।

(१) यो योजना कार्यान्वयन गर्दा कर्मको डोवाफ नहुने, वनगड्डल बिगाडा नहुने, पहिरो खसला नरहेको र भुटानमा उत्राउ पाती रहेकोले पानी खसन्दा बाढ निक्काउ नरहेको ।

(२) यस योजना सिचाई खसन्दा कुनै पनि कार्यक्रम नरहेकोले सिचाई आभावा कृषि उत्पादन कम हुनेकोले योजना कार्यान्वयन गर्नेको लागि म.प. वि. वि. वि. १.४ लाई दिने दिति योजना भाग गर्ने निर्णय गरियो ।

(३) नहर मार्गको हड्डिमा बनाउने हुने मोदीह लो अगता निम्नतम उपलब्ध गराउने हुने भनी प्रतिवद्धता गरियो र सिचाई तथा जलकोत कार्यान्वयन गराउने लाइला अनुसा १०% अगता र UP amount cash ०.५% बाँड्ने बापतको रकम अगता गर्ने हुने मोदीह मन्जुर हुने ।

(४) पुनराविर्त योजना कार्यान्वयन गर्दा योतमा सामाजिक बाढ निक्काउ उत्पन्न नहुने, बाढान्ता बिगाडा हुने भएकोले सफलता हुने योजना सफल गर्ने गराउने भाग गर्ने निर्णय गरियो । साथै योजना कार्यान्वयन गर्दा आई जेका समसाधक हुने मोदीह आफै समसाधन गर्ने प्रतिवद्धता गरियो ।

विष्णु विष्णु रुक्मा भोरव (को) १५५५ ई. १

[illegible]

19219 आनन्दि

३. योगेश्वर महाराज अ. व. वि. डि. डि. ७-४
 ४. ई. चन्द्र च. च. च. —। —
 ५. ई. च. च. च. च. च. —। —
 ६. ई. च. च. च. च. च. —। —

— 1. — पंचमः अङ्कः

~~N~~ R. No. दशरथ राव - 1.

एक फी. व. का ताला

आज मिति २०६० साल अश्विन १४ गतेका दिन
 गतेको खोला सिंचाई योजना ओखलोट ७, ८, ९
 धुलाका अध्यक्ष श्री ज्ञानेन्द्र राज महर्लाइको
 अध्यक्षतामा कुन कार्यक्रमको सामाजिक तथा वातावरणी
 य खनव्यापक योजना (SEMP) सम्बन्धी
 खुधारा भने गर्दा आग मिला गर्दै योजना
 सम्बन्धी सम्पत्तिको बारेमा दस्तावेज तथा विभिन्न
 निर्णयहरू गरियो ।

उपस्थिति

अध्यक्ष	श्री ज्ञानेन्द्र राज महर्लाइ	गतेको खोला	सि.म. ओखलोट
सचिव	श्री दुर्गा राज पौडेल	सदस्य	१५११
उपसचिव	सि.सि.र	उपसचिव	१
सदस्य	मनकुला मि.सि.	उपसचिव	९
	लालि व. सि.सि.	उपसचिव	३
	मि.म.पुन शर्मा		७
सदस्य	मिल वहादुर सि.सि.		३
सदस्य	कुम्भराज शर्मा	सदस्य	७
सदस्य	दुर्गा राज पौडेल	उपसचिव	८
	नली शर्मा		७
सदस्य	शा.दा. मि.सि.		९
सदस्य	हरि वहादुर सि.सि.		७
सदस्य	मु.रा. गौरील		७
सदस्य	विष्णु व. मि.सि.		९
सदस्य	धन वहादुर शर्मा		९
	रि.का.देवी महर्लाइ		८
	अव. राज सि.सि.		७
	शे.व. राज पौडेल		८

ANNEX F

IRRIGATION SERVICE FEE COLLECTION PLAN

**Irrigation and Water Resources Management Project
(Additional Funding)**

O & M Cost and ISF Collection Plan

Subproject: Gartung Khola District: Pyuthan Construction Start: F/Y 2073/074 Finish: F/Y 074/75

1. Salient Features of Subproject Infrastructure:

Name of Canal/Structure	Size / No	Critical Features regarding O&M
Intake with trash rack without gate	1	Flood water may damage and may require repair frequently .
Lined canal	1	May need cleaning of litters and debris from road opened above the canal alignment.
Steel gates	8	Need greasing and polishing to facilitate easy operation

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

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

- a) Engineer's estimate of overall O&M cost 295180NPR
- b) Estimated non-ISF income of WUA (excluding labor contributions) 8050NPR
- c) Additional funds required by WUA through ISF to meet O&M costs = (a – b) =287130 NPR
- d) Equivalent rate per ha for ISF 5221 NPR/ha

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

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) 114000 NPR
- b) Estimated non-ISF income of WUA (excluding labour contributions) 8050 NPR
- c) Additional funds required by WUA through ISF to meet O&M costs (= a – b) 105950 NPR
- d) Equivalent rate per ha for ISF 1926 NPR/ha
- e) Available records, if any, of ISF collection in recent years. non

Year	NPR '000					
	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
5221		1,000	2500	3500	4500	5221

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. ISF Collection Plan as per WUA:

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

- a) Timing of payments (before/after harvest). After harvest
- b) Has a person responsible for ISF collection been appointed yet? (Y/N) No, Pale himself.
- 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:

Phase 1 – Pre-project Implementation

- SN 25 Preparation of annual work programme 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

(12 Feb 2018)

A Project Details

Name of Irrigation Sub-project (ISP)	Gartung Khola	
Command Area	55	ha
Number of Households	135	Nos
Population	700	Nos

B Estimated Cost of Civil Works	14,759,000	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 - 3 % of civil works cost and including:	2%	295,180.00
a) Operation cost includes the following <ul style="list-style-type: none"> - Office rent and furnitures - Stationary - WUA Renewal cost - WUA audit cost - WUA G assembly/ election cost - other office expenses - Miscellaneous expenses (Vehicle rent) 		
b) Maintenance cost includes the following <ul style="list-style-type: none"> - Routine maintenance of H/W and structures including operating gates. - Dhalpa/chaoukidar/heralu - ISF collector remuneration - Emergency maintenence of Canal and structures as and when required - Miscellaneous expenses (Guests and meeting refreshment) 		

D Calculation of ISF based on Engineer's Estimate

Annual amount required for O& M = (Engineer's estimate - WUA income)	287,130.00
ISF rate per ha	5,220.55
ISF rate per bigha (1ha = 1.48 Bigha)	3,527.40
ISF rate per kattha (1ha = 29.60 Kattha)	176.37
ISF rate per ropani (1ha = 19.675 Ropani)	265.34

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)	40	550	22000
2	Intake H/W Diversion (...2..... times/year)	360	550	198000
2	Branch canal repair/cleaning (...2..... times/year)			0
	Total			220,000

F Expected Sources of Cash Income of WUA

SN	Description	Quantity	Rate	Amount (NPR)
1	Membership Fee	135	50	6,750
2	Defaulter's Fee			0
3	Industries (Fish, water shear etc)	3	100	300
4	Visitor's fee	1	1,000	1,000
5	Agro-mechanical rental of WUA equipments			0
6	Profit from Land buy/sell fee			0
7	Profit from culture program			0
8	Profit from WUA Training allowance/Exposure visit			0
9	Sand obtained from canal de-silting			0
10	Interest of bank deposit			0
11	Interest of loan provided to WUA beneficiaries by WUA			0
12	Grass of canal bank			0
13	Other (pebbles)			0
	Total			8,050

G Provisional O&M Budget Agreed with WUA

SN	Description	Quantity	Rate	Amount (NPR)
1	O&M of Headworks	1	5,000	5,000
2	O&M of Main Canals	1	20,000	10,000
3	O&M of Branch Canals			
4	O&M of Flow Control Structures	4	500	2,000
5	O&M of Bridges, Culverts and Syphons, Aqueduct	15	20,000	20,000
6	Remuneration of Dhalpa / Heralu / Chowkidar			
7	Transportation	4	500	2,000
8	Office Rent	1	500	6,000
9	Office Equipment (incl furniture and stationery)	1	30,000	30,000
10	Remuneration for ISF Collector			
11	WUA General Assembly	1	4,000	4,000
12	WUA Audit	1	10,000	10,000
13	other	1	5,000	5,000
	Subtotal			94,000
14	Deposit into fund for emergency repairs	1	20,000	20,000
	Total			114,000

H Calculation of ISF based on WUA's Agreed Budget

Annual amount required for O& M = (Engineer's estimate - WUA income) - NPR	105,950
ISF rate per ha	1,926
ISF rate per bigha (1ha = 1.48 bigha)	1,302
ISF rate per kattha (1ha = 29.60 kattha)	65
ISF rate per ropani (1ha = 19.675 ropani)	98

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.