

Modernisation of New Partap Canal

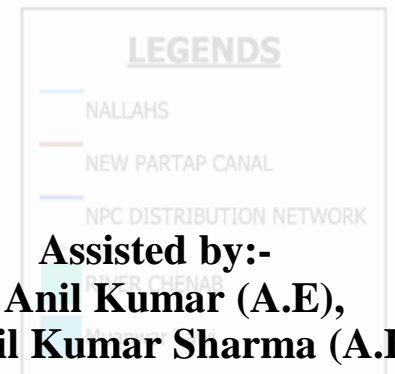
Irrigation Division Akhnoor

Under NABARD

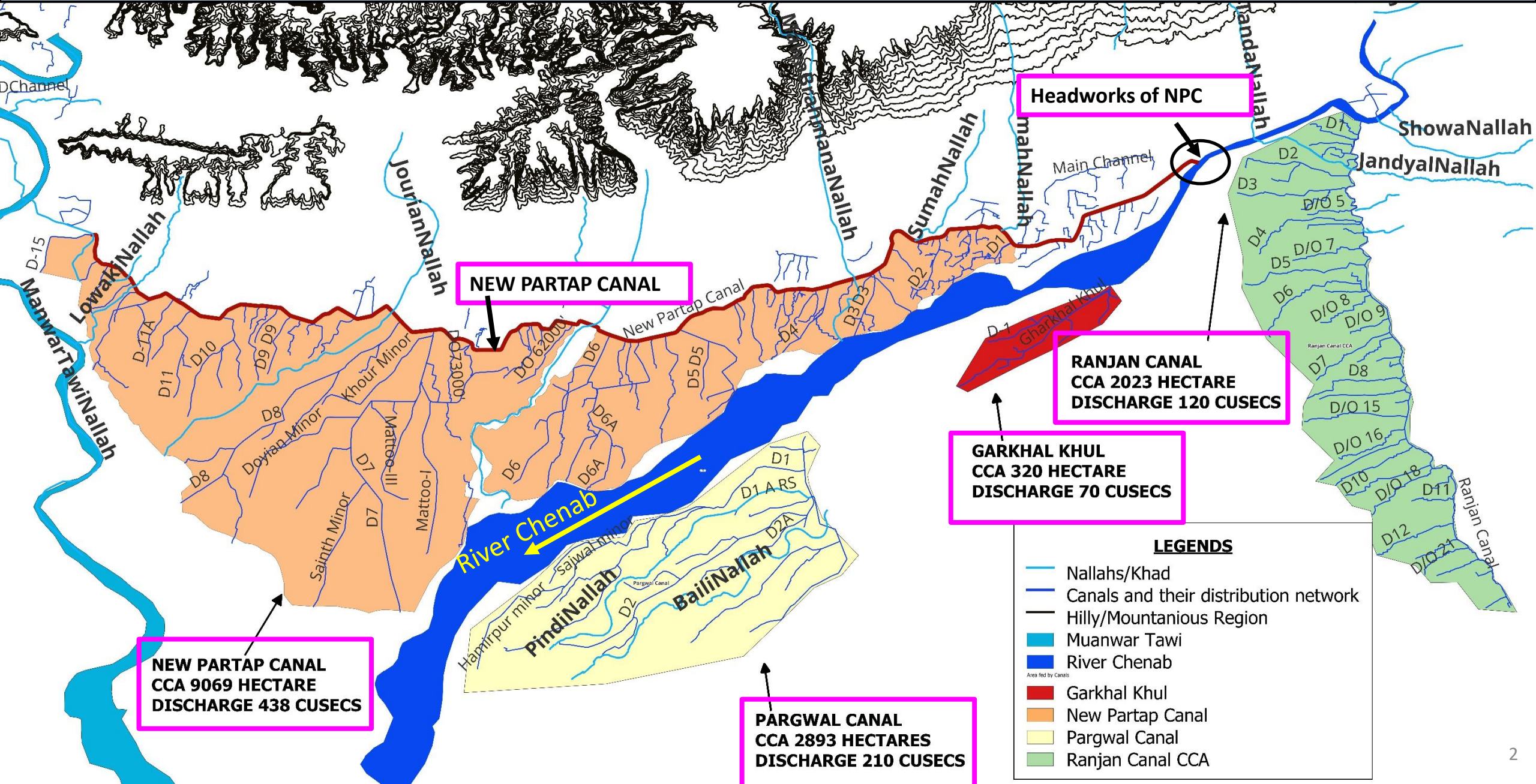
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I&FC Department Jammu**

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Discharge/CCA of different canals under ID Akhnoor



Salient Features of New Partap Canal

- **Length:** 33.69 km
- **Distribution System:** 157 km of distributaries and minor canals
- **Cultivable Command Area (CCA):** 9,069 hectares
- **Type:** Gravity canal, classified as a contour canal
- **Coverage and Beneficiaries**
- **Service Area:**
 - Serves **96 villages** in the region
 - Benefitting a population of approximately **1,10,000 people**
- **Agricultural Impact**
 - Typical crops include **wheat, rice, sugarcane, and vegetables**
 - Contributes significantly to the local economy through improved agricultural output
- **Additional Features:**
 - **Supports 18 lift schemes** for additional irrigation capacity
 - Plays a vital role in sustaining local agriculture and rural livelihoods



Head works of New Partap Canal

Lat: 32°53'45", Long: 74°44'18"
Elevation: 306.00 m above M.S.L.

Image © 2024 Airbus

Timeline of Major Events

Construction

- Partap Canal is built using conventional design and methods.
- Constructed to irrigate 8093 Hectares of Cultivable Command Area (CCA).

1958–1969

First Modernisation

- First phase of modernisation begins, focusing on pitching, and grouting.
- Six Lift schemes and additional distributaries are constructed.

1991

Completion of Phase 2

- Second phase of modernisation ends.
- Further improvements to canal infrastructure and expansions.
- Total 18 lift schemes working on NPC.

2024-2027

1906

Remodeling

- Remodelled due to a major flood in 1957 damaging headworks at Devipur and change in habitation caused by partition and war in 1947.
- New headwork established at Jia Pota Ghat.
- Total length: 33.69 km, with a new designed discharge of 500 cusecs.

1982

Completion of Phase 1

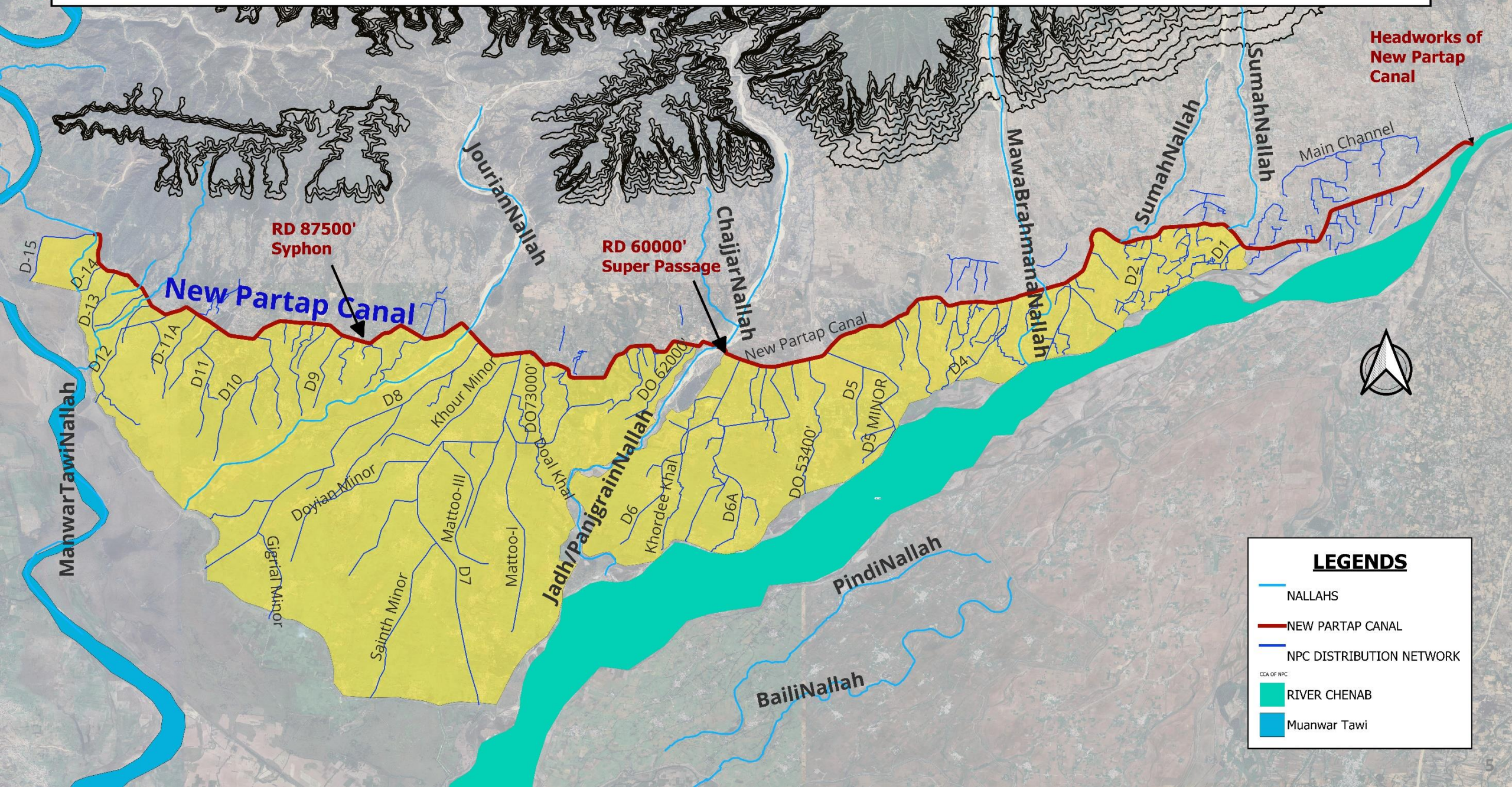
- First modernisation phase concludes, focusing on direct outlets and canal lining.
- Four lift schemes added to expand irrigation capacity.

1997-2012

Proposed modernisation under NABARD

- New modernisation plan proposed to further enhance the canal's capacity, strengthen major structures.
- Focus on stabilizing potential, increasing Cultivable Command Area (CCA) and improving efficiency.

INDEX MAP SHOWING NEW PARTAP CANAL



Headworks of New Partap Canal

RD 87500' Syphon

RD 60000' Super Passage

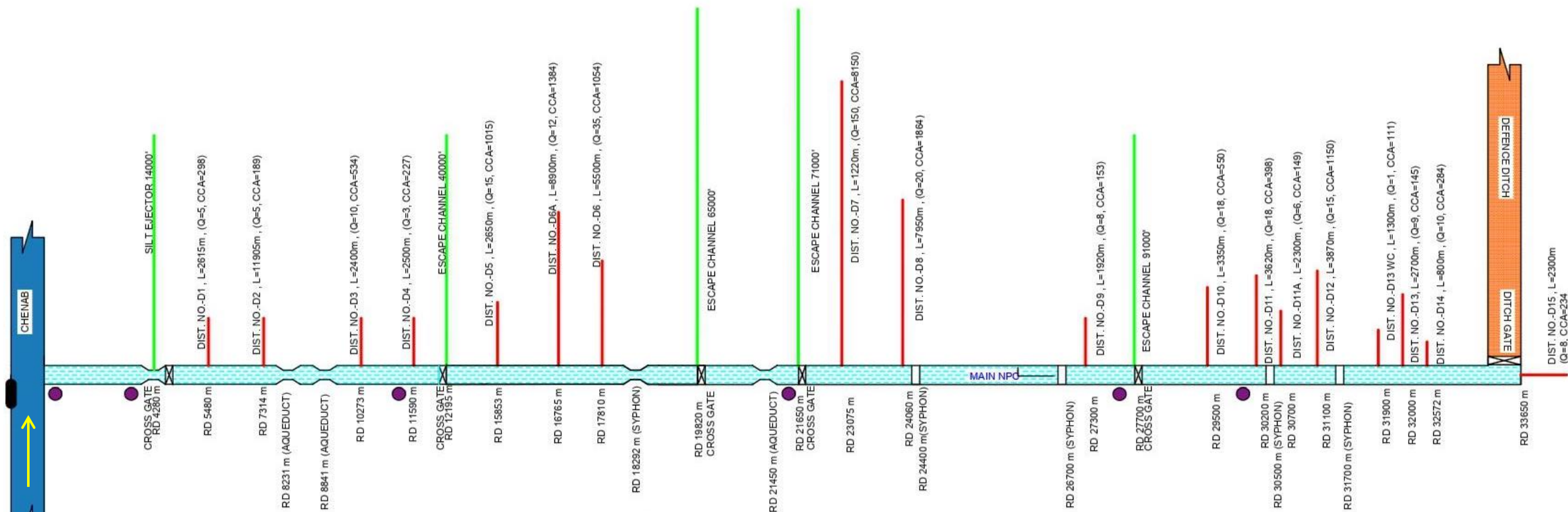
New Partap Canal



LEGENDS

- NALLAHS
- NEW PARTAP CANAL
- NPC DISTRIBUTION NETWORK
- RIVER CHENAB
- Muanwar Tawi

Line plan showing New Partap Canal and its distribution network



S. No.	Name of the Direct Outlet	Length (in Mtrs.)	CCA in Acres	Discharge in Cusecs
1	D/O 21500'	400	23	1
2	D/O 22500'	900	234	4
3	D/O 24100'	300	32	1
4	D/O 25000'	-	-	1.5
5	D/O 25500'	-	-	2
6	D/O 25600' LIS	500	100	2
7	D/O 25600' RIS	1750	13	0.5
8	D/O 27500' LIS	20	0.5	0.5
9	D/O 27500' RIS	300	16	0.5
10	D/O 28200' LIS	100	12	0.5
11	D/O 30900'	1100	274	2
12	D/O 32700'	850	92	1
13	D/O 35000'	820	69	1.5
14	D/O 39100'	1100	180	1.5
15	D/O 40000'	1000	40	1
16	D/O 41000'	1000	198	3
17	D/O 42000'	850	58	1
18	D/O 44000'	1950	340	2
19	D/O 46000'	500	45	1

S. No.	Name of the Direct Outlet	Length (in Mtrs.)	CCA in Acres	Discharge in Cusecs
20	D/O 56000'	800	25	1
21	D/O 51400'	3500	598	4
22	D/O 54000'	1700	65	2
23	D/O 56000'	1400	220	2
24	D/O 56600'	1400	72	1
25	D/O 62000'	2500	325	2
26	D/O 63000'	1100	90	2
27	D/O 63500'	1110	30	1
28	D/O 64000'	700	29	1
29	D/O 65000'	1200	43	2
30	D/O 71000'	950	223	3
31	D/O 71000'	2500	331	2
32	D/O 81000'	1300	140	2
33	D/O 87000'	950	144	3
34	D/O 88000'	1400	144	2
35	D/O 98000'	1300	130	2
36	D/O 91500'	900	45	2
37	D/O 94500'	600	25	1
38	D/O 104000'	1000	41	1

S.No.	Name of Scheme	Discharge (Cusecs)	CCA (Hect.)
1	LIS Aryanpura	6	100
2	LIS Patyari	4.5	41
3	LIS Lower Manda	3	24
4	LIS Manda I	10	53
5	LIS Gurha	10	213
6	LIS Manda II	4	51
7	LIS Kot Garhi	8	101
8	LIS Kot	3	60
9	LIS Lehrian	4	70
10	LIS Kot II	5	100
11	LIS Badyala Chak	6	90
12	LIS Chak Bhagwana	8	130
13	LIS Nud	4.5	62
14	LIS Nazla Chak	6	110
15	LIS Narayana	6	50
16	LIS Ajal Malal	5	80
17	LIS Trooti	3	48
18	LIS Thanger Chowdriwala	6	140

LEGENDS	
	CHENAB
	NEW PARTAP CANAL
	DISTRIBUTARY
	ESCAPE
	GAUGE READER QTR
	DITCH

Loss of irrigation water due to damaged structures



Damaged Protection work of Cross Drainage works

- **Cross-Drainage Works in Irrigation Canals**
- **Observations:**
 - Complete damage to the protections of cross-drainage structures.
 - Cracks, corrosion, and structural instability in key areas.
- **Event of Damage to Syphon:**
 - Syphon failure due to deterioration can cause complete failure of irrigation scheme in the lower reaches of the structure



2.854396
e: 74.467566
n: 284.67m
cy: 6.4m
26-07-2022 11:02
Main canal Syfn R.D. 30270

Temporary protection work of RD 60000' Super Passage



Cost of temporary restoration under UT CAPEX 2023-24	28.40 Lacs
CCA of NPC downstream Superpassage	6039 Hectares
Gross Value of the Crop saved annually	Rs. 50 Crores

Temporary protection work of RD 87500' Syphon

Before



After



Cost of temporary restoration UT CAPEX 2022-23	3.00 Lacs
CCA of NPC downstream Syphon	1438 Hectares
Gross Value of the Crop saved annually	Rs. 16.00 Crores

Trash Gate Gets choked

- Trash Gate gets choked and blocks the inlet of the canal. Which is very difficult to clear considering high water level
- Standing rack level is 12 feet and water level is at 23 feet



NEED FOR MODERNISATION



1. Increased Demand for Water



2. Change in Crop Patterns



3. Dilapidated Condition of Irrigation Canals and Structures



4. Increased Area for Crop Cultivation



5. Environmental and Sustainability Concerns

Pre-Modernisation Vs Post-Modernisation

S.no.	Particulars	Pre-modernisation	Post-modernisation	Increase/ Benefits
1	Length of Distribution Network	156.82 Km	167.02 Km	10.02 Km
2	C.C.A.	9069 Hectares	9900 Hectares	831 Hectares
3	Irrigation potential (Kharif+Rabi)	11776 Hectares	13807 Hectares	2031 Hectares
4	Net Value of Yield annually	Rs. 7561.28 Lacs	Rs. 12593.59 Lacs	Rs. 5032.31 Lacs

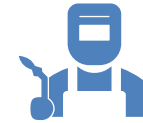
KEY BENEFITS OF THIS PROJECT



**Potential to be created:
2031 hectares**



**Villages to be benefitted: 96
Souls to be benefitted:
1,10,000**

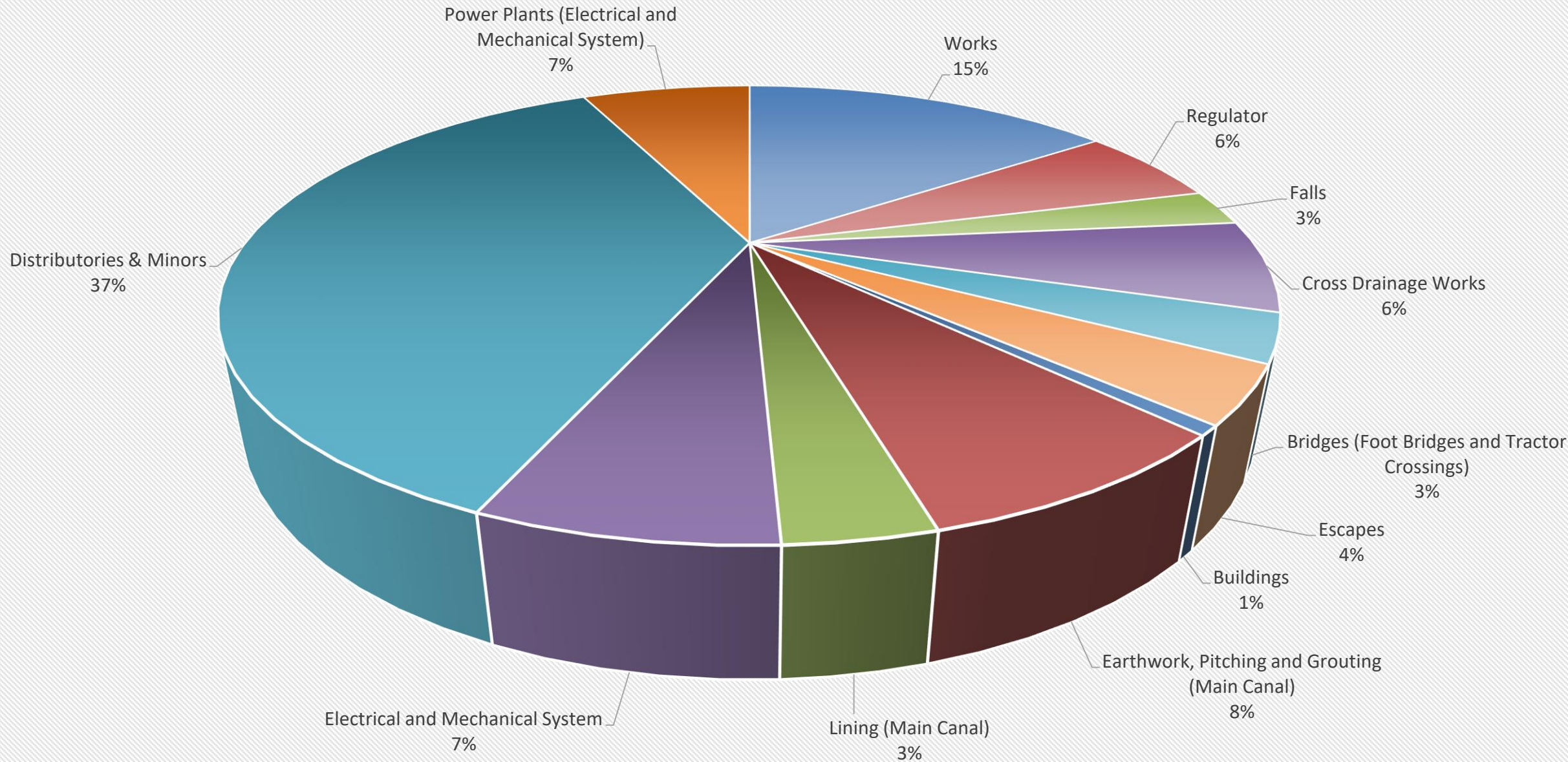


**Employment to be
generated:
Skilled labour: 417,495 mandays
Unskilled labour: 128,571
mandays**



**Annual Benefits: 50.32
Crores
Cost-benefit ratio: 1 : 2.77**

SCOPE OF THE PROJECT



PROJECT SCOPE OVERVIEW

<u>Particulars of work</u>	<u>Scope of work</u>	<u>Works to be taken up 1st year</u>
Main Canal (Pitching and grouting)	7.9 Km	7.9 Km
Main Canal (Wall Section)	0.8 Km	0.8 Km
Main Canal (Lining Section)	2.2 Km	2.0 Km
Distributaries (Pitching and grouting)	24 Km	9 Km
Distributaries (Wall Section)	5.2 Km	3 Km
Distributaries (Lining Section)	3.7 Km	-
Direct Outlets and Minors (Pitching and grouting)	25.06 Km	10 Km
Direct Outlets and Minors (Wall Section)	12.87 Km	6.2 Km
Major Bridges	4 Nos	-
Tractor Crossings/Culverts/Road Crossings	30 Nos	10 Nos
Falls on distributaries and direct Outlets	42 Nos	15 Nos
Headworks/Regulators of Escape Channels/Distributaries/Direct Outlets/Minors	99 Nos	20 Nos
Extension of Distributaries	3.6 Km	2 Km
Extension of Direct Outlet/ minors/Construction of New Minors	6.4 Km	0.5 Km
Cross Drainage works (Pipe Syphon Replacements)	5 no.	-
Cross Drainage works (Aqueducts and overhead troughs)	5 No.	-
Cross Drainage works (Super Passage protections)	2 No.	1 No
Buildings (Gauge reader quarters)	3 No.	1 No

YEAR WISE ALLOCATION OF FUNDS

Modernisation of New Partap Canal (Rs. 75 Cr)

1st Year

Proposed allocation: Rs. 30 Cr

Package 1 (Rs. 6.00 Cr)

Package 2 (Rs. 6.50 Cr)

Package 3 (Rs. 4.37 Cr)

Package 4 (Rs. 8.36 Cr)

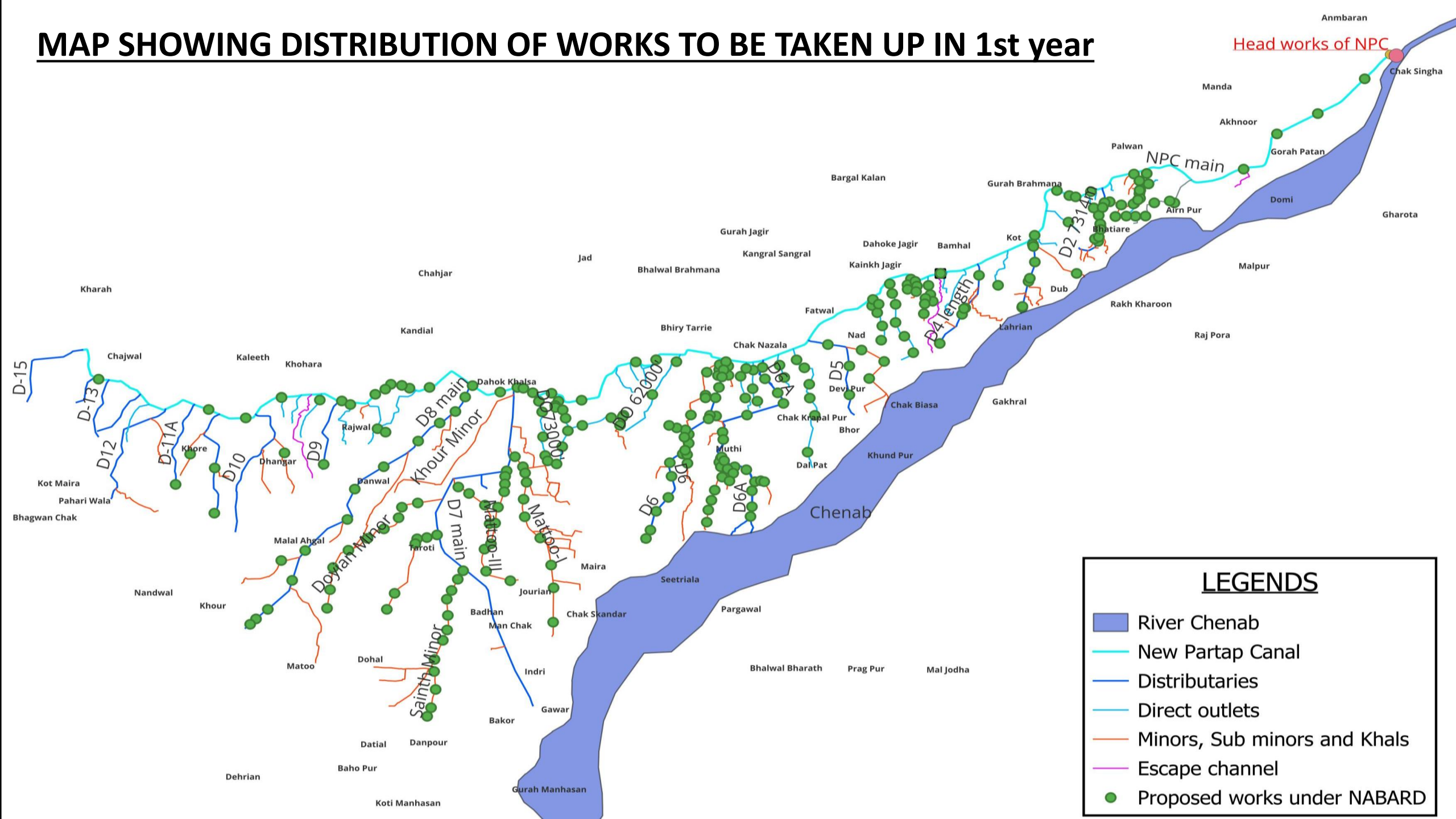
2nd Year

Proposed allocation: Rs. 25 Cr

3rd Year

Proposed allocation: Rs. 20 Cr

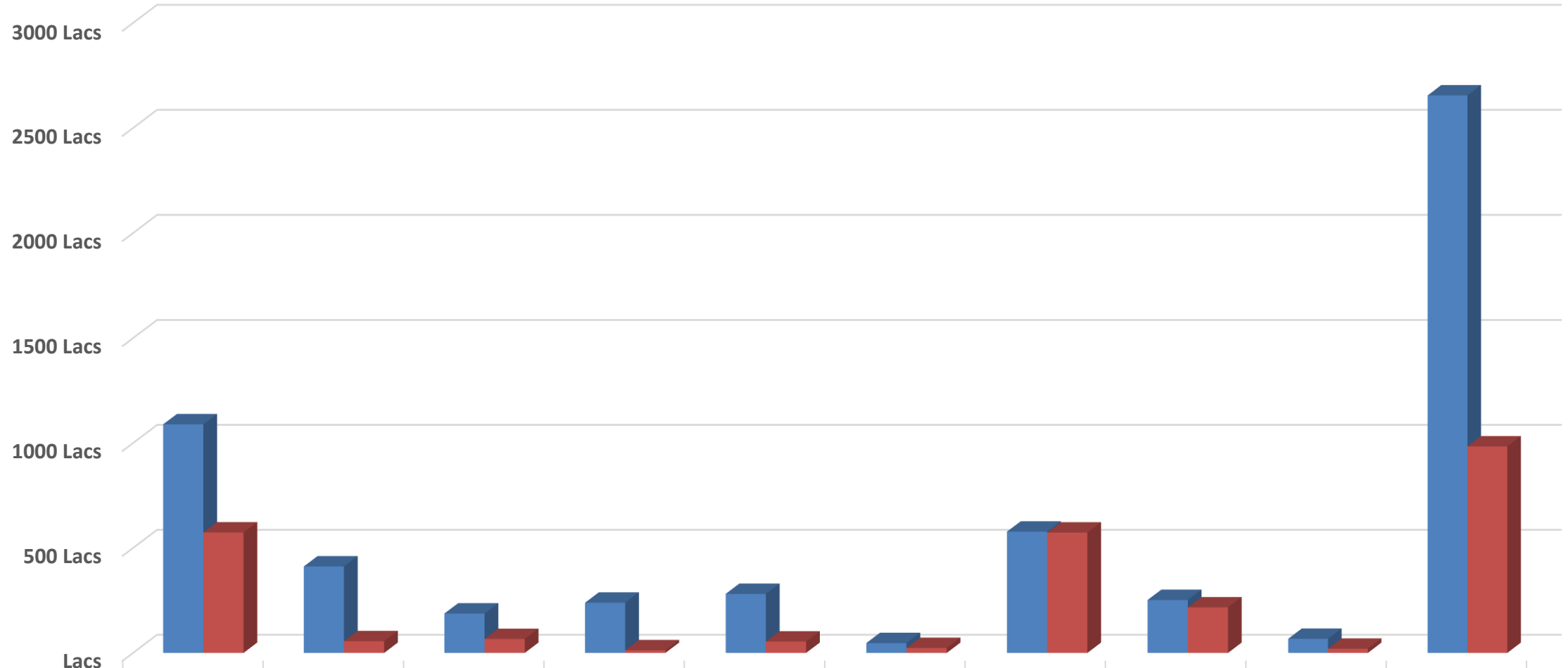
MAP SHOWING DISTRIBUTION OF WORKS TO BE TAKEN UP IN 1st year



LEGENDS

- River Chenab
- New Partap Canal
- Distributaries
- Direct outlets
- Minors, Sub minors and Khals
- Escape channel
- Proposed works under NABARD

SCOPE OF WORK IN 1st YEAR VS TOTAL SCOPE OF PROJECT



	Works	Regulator	Falls	Bridges (Foot Bridges and Tractor Crossings)	Escapes	Buildings	Earthwork, Pitching and Grouting (Main Canal)	Lining (Main Canal)	Special T & P	Distributories & Minors
■ Total Amount	1089 Lacs	412 Lacs	188 Lacs	239 Lacs	281 Lacs	47 Lacs	578 Lacs	252 Lacs	67 Lacs	2655 Lacs
■ Scope of work in 1st year	574 Lacs	56 Lacs	66 Lacs	13 Lacs	54 Lacs	24 Lacs	573 Lacs	217 Lacs	20 Lacs	984 Lacs

Thank You