



Gujarat's Lifeline

SARDAR SAROVAR NARMADA NIGAM LIMITED (SSNNL)

**LESSONS FROM
UNDER-GROUND PIPELINES (UGPL)
NETWORK
IN SARDAR SAROVAR PROJECT**

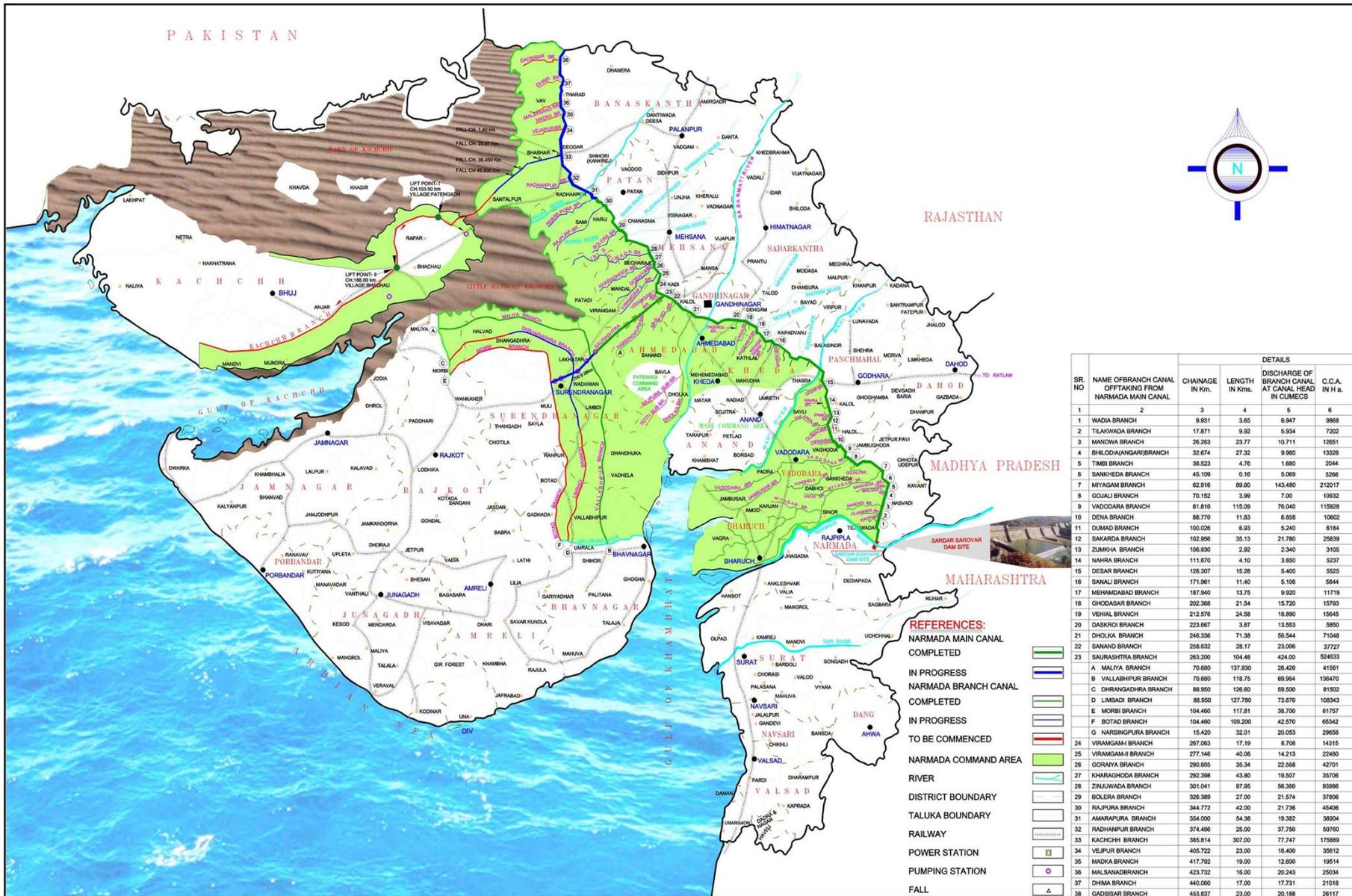
*- DR. M. B. JOSHI
CHIEF GENERAL MANAGER
(TECHNICAL & COORDINATION)*



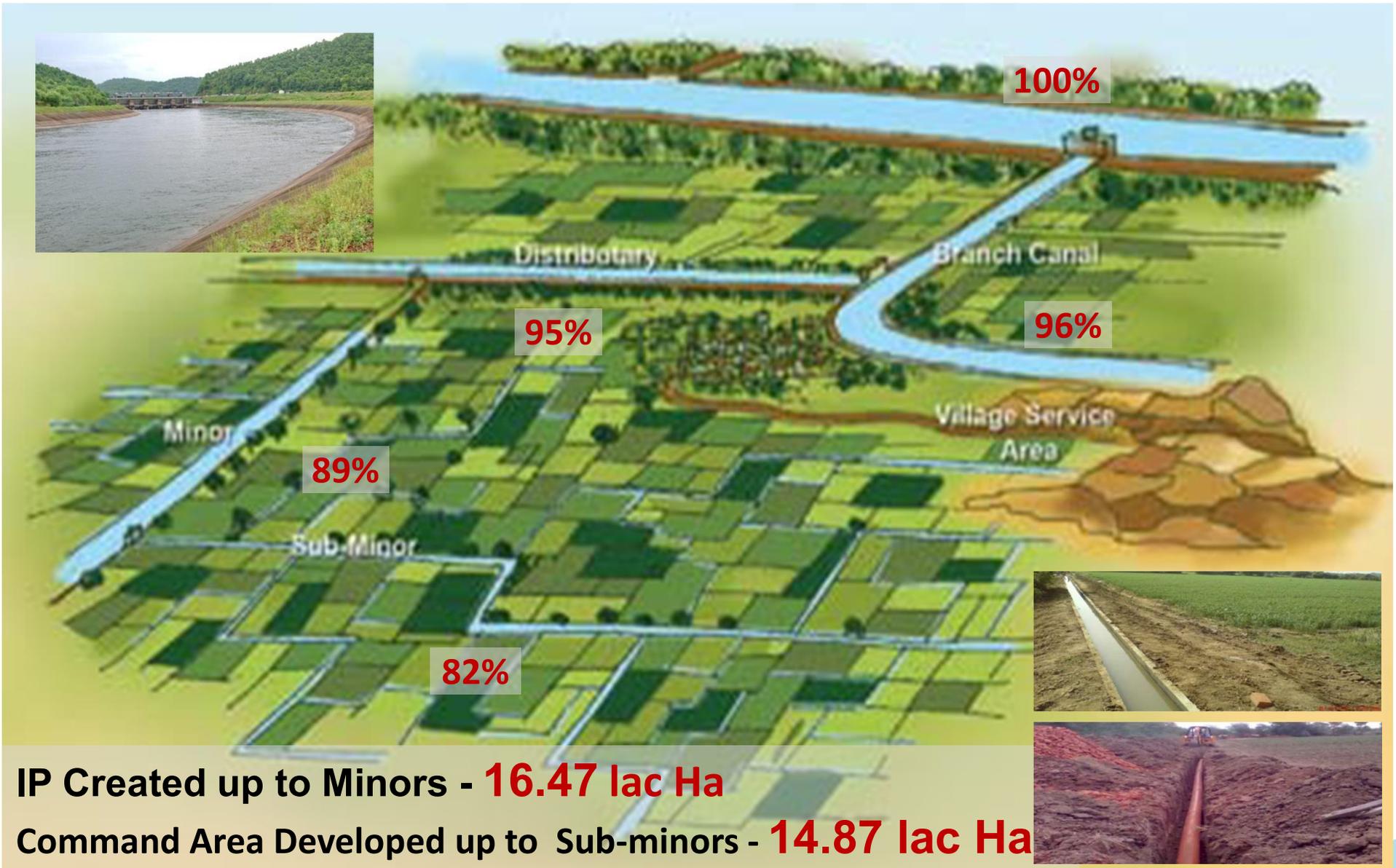
Sardar Sarovar Project (SSP) – Broad Outline

- **SSP – the largest Irrigation Canal Network having an estimated length of 71,748 km consisting of Main Canal, Branch Canals, Distributaries, Minors and Sub-minors.**
- **Ultimate Irrigation Potential of 1.8 million hectare.**
- **Sub-minors (the fifth level canal in the hierarchical canal network) form a major part with 48,320 km length (67%).**
- **Acquisition of Private land was a major constraint in implementation of Sub-minors, resulting into the gap between IP Created and IP Utilised.**
- **During 2012 to 2014, GoG formed a new policy for Under-Ground Pipe Line (UGPL) Sub-minors with Farmers' participation.**

Sardar Sarovar Project - CCA 1.8 Million Hectare



Narmada Canal Network



Conventional System of Open Gravity Channels

In Phase-I of the SSP Command Area, Sub-Minors were constructed as conventional Open Channels (gravity based) and following limitations were experienced:

- Permanent loss of land
- More time for construction
- Large no. of Drainage Structures and Bridges
- Low Water-Use Efficiency
- Vulnerable to damages / flooding
- Liable to Water Logging and Soil Deterioration
- Reluctance of farmers to give away land due to limited and fragmentation



Open Channel Sub-Minors – Vulnerable to Damages



Under Ground Pipe Line (UGPL)

- **Mammoth task of constructing about 38,000 km length of Sub-Minors was remaining to achieve the Last Mile Connectivity**
- **Farmers were reluctant to part away with their precious land**
- **Government therefore decided to give option of Underground Pipelines, having following advantages**
 - **Precious Land Saving and Water Saving (up to 10-20 %)**
 - **Less implementation period**
 - **Feasible even in flood zone / Undulating area**
 - **Land fragmentation can be avoided**
 - **Field Channels can be integrated with the Sub-Minors**
 - **O & M expenditure is less**
 - **Future integration with PINS/MIS possible**
 - **Prevent seepage losses and evaporation**
 - **Less vulnerable to pilferages and damages**
 - **Assured water supply to the Tail-enders**

UGPL Policy and Scheme – 2014 & 2015

- **Farmers have an option to select – Open Channel or UGPL (uPVC Pipes of 180 to 355 mm)**
- **Alignment and Turnout locations decided in consultation with farmers**
- **SSNNL to bear 97.5% of the total cost**
- **The group of farmers is expected to pay just 2.5% of the cost (cash or as a labour component) so as to inculcate a sense of ownership amongst farmers.**
- **41 Pipe Manufacturers are empaneled with 138 Implementing Agencies.**
- **For Quality Control, TPI through reputed Institutions like CIPET & GIRDA**
- **After the Defect liability period of 5 years, O&M of Sub-minors will be responsibility of the beneficiary farmers' of chak.**

Under Ground Pipe Line (UGPL) - Implementation

Consultation with Beneficiary Farmers after finalizing Chak and Sub-chak
(SSNNL & Implementing Agency) (> 7.5 lakh farmers)



Fixing the UGPL Alignment and locations of Turnouts
(SSNNL, Implementing Agency, Farmers)



Preparation of Drawings & Estimates
(WAPCOS / Implementing Agency)



Technical Sanction to the Estimates
(SSNNL)

Under Ground Pipe Line (UGPL) - Implementation

Collecting 2.5% contribution from the Beneficiary Farmers
(Implementing Agency) (> 7.5 lakh farmers)

Issuance of Letter of Intent (LOI)
(SSNNL)

Tri-partite Agreement
(Farmers, Agency & SSNNL) (> 11 lakh hectare)

Payment of 5% Security Deposit (Agency)

Issuance of Work Order (SSNNL)



ગુજરાત ગુજરાત GUJARAT

AT 213654

કડી ક્ર. ર. નંબર ૮૮૨ તારીખ : ૧૭/૫/૨૦૧૬
 સ્ટેમ્પની કિંમત રૂપિયા : એકસો રૂપિયા પુરા
 ખરીદનારનું નામ : શ્રી અરવિંદકુમાર સીટી સંતરામ લીમિટેડ
 સરનામું : સ. પરમાર, માંજીવાડ
 ખરીદનારની સહી : [Signature]

A.B Patel
અરવિંદકુમાર બી. પટેલ
 રે.હલ ૪૧, સંતરામ કુંજ,
 સંતરામ સીટી, નાની કડી
 તા. કડી જી. મહેસાણા
 લાયસન્સ નંબર : ૧/૨૦૦૨

સરદાર સરોવર નર્મદા નિગમ લીમિટેડ, (ગુજરાત સરકારનું સંપૂર્ણ માલિકીનું સાહસ) અમલીકરણ એજન્સી અને ચક્રના ખેડૂતોના જૂથ વચ્ચે સબ માર્કીટીંગ (બુગર્મ પાઈપ લાઈન તથા ડ્રૂડીઓ)ના બાંધકામ અંગેનો ત્રિપક્ષીય કરાર

અરજી પત્રક નંબર :- Jan/SVM/06/2015-16
ત્રિપક્ષીય કરાર નંબર ૨૪૬ વર્ષ ૨૦૧૬-૧૭
(TPN No 246 OF 2016-17)

પ્રથમ પક્ષકાર :- સરદાર સરોવર નર્મદા નિગમ લીમિટેડ, જ્વોક નંબર-૧૨, નવા સચિવાલય સંકુલ, ગાંધીનગર
બીજા પક્ષકાર :- સબ માર્કીટીંગ વિપત વિસ્તારમાં સમાવિષ્ટ લાભિત ખેડૂત જૂથના પ્રતિનિધિ (પ્રમુખ)
ત્રીજા પક્ષકાર :- સબ માર્કીટીંગ (બુગર્મ પાઈપ લાઈન તથા ડ્રૂડીઓ)ના બાંધકામ માટે પસંદગી પામેલ અમલીકરણ એજન્સી

આજ તારીખ ૧૮/૦૫/૨૦૧૬ના રોજ નીચે મુજબ ત્રણેય પક્ષકારો સારે મગીને આ ત્રિપક્ષીય કરાર કરવામાં આવે છે.



120 અરવિંદકુમાર બી. પટેલ

(૧૨) આ કરારના અમલનો સમ્પાદનો કરવા કર્મ લાગુ પડે ત્યારે આ કરારનો કોઈક લાઠિયાઈથી પૂર્ણ થાય તે લાગુ પડે તે મનાશે.

પ્રથમ પક્ષકાર :- સ.સ.ન.નિ.સિ. નવ વતી અધિકૃત પ્રતિનિધિ
બીજા પક્ષકાર :- અમલીકરણ એજન્સીના અધિકૃત પ્રતિનિધિ
 સહી : [Signature] સહી : [Signature]
 નામ :- અરવિંદકુમાર સીટી સંતરામ નામ :- ડી.પ. પટેલ
 ક્ષેત્રનો સીલ ક્ષેત્રનો સીલ

બીજા પક્ષકાર :- ખેડૂત જૂથના અધિકૃત પ્રતિનિધિ
 સહી : [Signature]
 નામ :- પટેલ ઉત્તરભાઈ વિદ્યાભાઈ ગણ-કરસાવાડી લાલુચો :- વિરમગામ પિત્લો :- અમડાવાડ

સહીઓ :-
 નામ :- પ્રમુખ મહાશય પટેલ સહી : [Signature]
 નામ :- મોહન પુસ્કર પાટિલ સહી : [Signature]
 નામ :- વિજયભાઈ મોહનભાઈ સહી : [Signature]

અમલીકરણ એજન્સીના અધિકૃત પ્રતિનિધિ તરફ
 સહી : [Signature]
 નામ :- ડી.પ. પટેલ



Laying & Stacking of uPVC Pipes



Sokli U.G.P.L.
Ta. Viramgam,
Dist. Ahmedabad



Arrangement for branching and
Kundi @Ch275m

Third Party Inspection Through Reputed Institutions

THIRD PARTY AGENCIES LIKE



AND



UGPL Turnout – Jashpura UGPL, Ta. Detroj, Dist. Ahmedabad



UGPL – Irrigated Field



Tendering and Price Discovery

Phase-I

- 67 Agencies submitted tenders and 38 Agencies were qualified for UGPL works.
- For each Item, Minimum quoted rates (excluding abnormal low rates) were considered to decide unit rates of different items.
- Agencies were awarded work at the approved Unit Rates regardless of their quoted rates.
- Later, about 250 Implementing Agencies were involved in Phase-I to ensure speedy execution and UGPL work in 5.91 Lakh ha completed up to year 2016-17.

Phase-II

- 198 Agencies submitted tenders online, 147 Agencies qualified for UGPL works.
- Same procedure for Price Discovery was adopted for finalizing Unit Rates and UGPL work in 5.27 lakh ha completed up to April-2019.

Progress of Construction of Sub-Minors & Field Channels at National Level

FIELD CHANNELS / OFD WORKS UNDER CADWM PROGRAMME AS ON 31.12.2013

thousand ha.

Sl. No.	Name of the State	2007-08		2008-09		2009-10		2010-11		2011-12		XI Plan	2012-13	2013-14	Cumulative achievement (upto 31.12.2013)
		Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	Achievement	Achievement*	Achievement**	
1	Andhra Pradesh	38.188	30.881	18.431	4.293	6.460	3.99	3.00	0.00	15.00	0.254	39.418	0.810	0.000	778.30
2	Arunachal Pradesh	2.349	9.117	2.675	0.000	1.642	1.22	0.00	0.29	0.20	0.824	11.451	0.560	1.117	22.08
3	Assam	0.700	0	7.337	0.000	0.958	1.99	3.67	1.44	2.00	1.460	4.885	0.900	0.000	62.42
4	Bihar	0.000	0	30.000	31.552	12.167	18.96	17.00	36.967	18.00	38.950	126.430	12.145	3.456	1486.05
5	Chattisgarh	0.000	40.704	0.000	27.674	14.400	29.00	14.40	28.957	25.00	27.937	154.267	29.326	36.615	271.55
6	G o a	0.163	1.023	0.991	0.000	0.194	0.88	0.88	0.601	0.50	0.502	3.008	0.600	0.000	13.99
7	Gujarat	175.000	21.04	0.000	6.980	0.000	0.24	5.73	1.618	13.00	13.000	42.880		0.000	1150.44
8	Haryana	42.600	17.867	33.334	85.887	34.035	54.04	44.00	53.830	40.00	43.990	255.612	37.562	45.379	935.85
9	Himachal Pradesh	0.000	0	0.000	0.005	6.302	0.12	2.97	0.488	0.20	0.000	0.613	0.000	0.000	22.85
10	Jammu & Kashmir	6.974	5.968	10.876	10.238	6.320	9.69	15.06	14.806	13.00	16.726	57.431	23.606	21.709	201.01
11	Jharkhand	0.000	0	0.000	0.000	0.000	0.00	0.70	0.000	0.30	0.000	0.000	0.000	0.000	0.00
12	Karnataka	82.184	36.844	38.395	26.487	37.478	12.09	15.06	21.907	23.00	17.436	114.759	19.726	6.892	1626.88
13	Kerala	5.300	0.421	2.620	0.494	1.895	0.11	1.07	0.153	0.30	0.205	1.386	0.320	0.731	184.73
14	Madhya Pradesh	11.212	9.517	0.000	9.516	10.361	10.26	8.00	10.235	35.00	22.430	61.954	67.122	0.000	1202.25
15	Maharashtra	28.296	33.965	36.000	11.524	2.000	20.70	18.50	12.443	15.00	10.273	88.904	3.991	2.459	1343.48
16	Manipur	7.590	0	6.986	3.400	6.266	5.43	6.29	6.039	10.00	8.492	23.356	0.500	0.300	88.04
17	Meghalaya	0.023	0	15.000	0.000	0.866	0.00	0.24	0.120	0.10	0.251	0.371		0.000	2.55
18	Mizoram	0.000	0	0.000	0.000	0.205	0.00	0.00	0.000	0.00	0.053	0.053		0.000	0.91
19	Nagaland	0.000	0	0.000	0.000	1.400	0.00	0.00	0.000	0.00	0.073	0.073	0.450	0.000	4.27
20	Orissa	19.651	11.031	28.991	13.993	11.643	18.47	15.56	27.356	20.00	33.000	103.853	36.880	23.325	601.51
21	Punjab	50.000	38.25	62.400	59.756	55.773	56.17	50.00	54.722	46.60	42.543	251.444	18.779	22.856	644.59
22	Rajasthan	59.300	17.472	59.000	12.274	10.600	40.84	35.00	46.222	18.00	14.446	131.252	7.441	11.894	1577.71
23	Sikkim	0.000	0	0.000	0.000	0.000	0.00	0.00	0.000	0.00	0.000	0.000	0.000	0.000	0.18
24	Tamil Nadu	20.915	20.448	17.836	20.800	3.900	18.56	18.58	23.807	13.00	26.412	110.025	18.260	16.874	1186.89
25	Tripura	0.000	0	0.000	0.000	0.000	0.00	0.00	0.000	0.00	0.000	0.000	0.000	0.000	0.41
26	Uttar Pradesh	114.000	98.617	114.000	85.789	114.000	67.00	0.00	69.000	40.00	79.130	399.536	75.712	32.903	7083.46
27	Uttarakhand	4.780	0	3.520	0.461	0.000	6.58	66.15	0.000	0.00	0.000	7.036	0.000	0.000	11.92
28	West Bengal	6.600	1.572	0.000	18.582	11.600	8.21	8.14	1.851	1.80	60.640	90.851	6.350	0.824	233.62
	TOTAL	675.825	394.737	488.392	429.705	350.465	384.53	350.00	412.854	350.00	459.027	2080.848	361.040	227.334	20737.946

*progress report of some States are awaited

**Based on quarterly progress reports received from States upto 3rd quarter

UGPL - Accomplishments so far

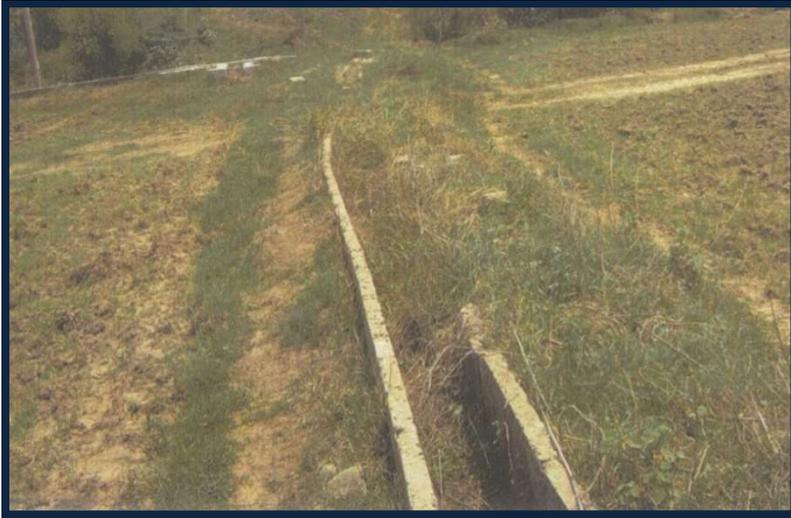
Between Jan-2015 and Apr-2019

Length Completed	29,278 km
Command Area Developed	11.18 lakh Ha.
Beneficiary Farmers	> 7.5 lakh
Tri-partite Agreements	22,367 chaks
Cost incurred	Rs. 3,923 crore



A Record in the Country in the history of development of Irrigation Infrastructure.

Conversion of Open Channel Sub-minors in to UGPL in Phase-I



Haripura Minor Chak No - 9 (SM - 1) Village - Vyadhar Tal - Tilakwada



The work has been awarded for 7,446 Km benefitting 2.49 Lac Ha. area at the cost of Rs 848.24 Crore. Till April - 2019, 6,435 km has been completed at the cost of Rs. 741.38 Crore.



THANK YOU
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