



GOVT OF ODISHA

DEPARTMENT OF WATER RESOURCES

ANNUAL REPORT 2017-18 OF

SUBARNAREKHA & BUDHABALANGA BASIN LAXMIPOSI

June- 2018

Chief Engineer & Basin Manager,
Subarnarekha & Budhabalanga Basin.
Laxmiposi

SUBARNAREKHA IRRIGATION PROJECT

LOCATION :

Subarnarekha River originating in Jharkhand flows through Jharkhand, West Bengal & Odisha before outfalling in Bay of Bengal in Odisha. In order to harness the water Resources potential of Subarnarekha River, the co-basin states i.e. Jharkhand (erstwhile Bihar), Odisha & West Bengal had Tripartite Agreement in 1978 under which the share of Odisha at Kokpara (in Jharkhand) was 1480 MCum. Government of Odisha subsequently formulated a scheme under which a canal was proposed to take off from Galudih Barrage in Jharkhand. The Canal drawing water from Galudih Barrage runs for 56.04 Km in Jharkhand before entering into Odisha where after the canal is known as Subarnarekha Main Canal running for a length of 46.50 Km. In addition, there are Branch Canals, distributaries, 3 Command Area Reservoirs, etc. The project contemplates to provide irrigation to an area of 1,09,627 ha in Mayurbhanj and Balasore districts of Odisha State.

The part of the Project covering CCA of 69933 hectare is presently in progress through AIBP funding and targeted to be completed by **March 2019**.

PROJECT PROPOSAL UNDER AIBP :

The ongoing works of AIBP consists of the following components:

A. IN JHARKHAND

- Construction of Barrage across river Subarnarekha at Galudih to divert part of Odisha's share (Odisha share 86.20%).
- Construction of 56.04 Km long Galudih Right Bank Canal (GRBC) off taking from Galudih Barrage to Jharkhand- Odisha Border to carry Odisha's share of water (Odisha share 94.00%).
- Construction of Ichha Dam across River Kharkhai to store water for use by Odisha and Jharkhand (Odisha share 26.46%).
- Construction of Chandil Dam across river Subarnarekha for irrigation in Jharkhand and flood storage for Odisha and West Bengal (Odisha share 26.47%).

B. IN ODISHA

- Subarnarekha Main Canal (lined) for a length of 46.50 km originates from the tail end of Galudih Right Bank Canal in Bihar (now Jharkhand) with a design discharge of 118.50 cumec and CCA of 6,938 ha. It feeds Haldia and Jambhira Reservoir. Further, Betnoti Branch Canal and Subarnarekha Branch Canal offtakes from Subarnarekha Main Canal.
- Betnoti Branch Canal (lined) for a length of 26.26 km with a design discharge of 60 cumec will irrigate a CCA of 22,836 ha in addition to feeding Baura Reservoir.
- Two command storage reservoirs namely Haldia (remodelling of existing reservoir) and Jambhira reservoir.

- Jambhira Right Main Canal (lined) offtakes from Jambhira Reservoir. The length of JRMC is 24.789 km with design discharge of 3.805 cumec which will irrigate a CCA of 3,530 ha.
- Jambhira Left Main Canal (lined) offtakes from Jambhira Reservoir. The length of JLMC is 82.46 km with design discharge of 27.00 cumec which will irrigate a CCA of 31,109 ha.
- Distribution system- The entire distribution system consists of lined distributaries, minors and sub-minors and water courses to irrigate a CCA of 69933 ha.

FINANCIAL STATUS

The revised cost of the Project approved by CWC in 123rd meeting held on 30.01.2014 is Rs.5561.57 crores including share cost of Rs.1065.83 crores to be borne by Odisha for works in Jharkhand. Planning Commission, GOI approved revised cost vide letter no.2(82)/2007-WR Dt.06.08.2014. The latest project cost is **Rs.6715.96 crore (2016 price level)**, which also includes cost of Rs.1208.46 crore to be borne by Odisha for related works in Jharkhand. For 1st phase Rs.5058.99Cr will be spent by **March'2019** to create Irrigation Potential of 69,933 Ha as follows. Out of Rs.5058.99 cr, an amount of **Rs.4178.05Cr.** has been spent till **March' 2018** (Odisha work-Rs.3177.59 cr, Joint works-Rs.1000.46 cr.).

Further, Planning Commission, Govt. of India vide Letter 20(18)/2010-WR dated 07.07.14 has approved the cost of CADP amounting to Rs.389.58 Cr for CCA of 69,933 ha. The expenditure till 03/2018 is Rs.25.30 cr.

The Budget Provision for Financial Year 2017-18 was Rs.506.03 Crore and the details of budget sub-head wise break up are furnished below.

Works	: Rs.284.15 Crore
Establishment	: Rs.44.44 Crore
Land Acquisition	: Rs.149.96 Crore
R&R	: Rs.02.00 Crore
Odisha Share to GOJ	: Rs.01.00 Crore
CAD&WM	: Rs.25.35 Crore
Total : Rs.506.90 crore	

PHYSICAL PROGRESS:

Physical progress is tabulated below.

A Dam:

Particulars	Progress
Jambhira dam	i) Earth work - 100 % ii) Concrete - 100%
Haladia Dam	i) Earth work - 85% ii) Concrete- 70% (spillway)

B. Distribution system:

Particulars	Progress			
	Land Acquisition	Earth work	Lining	Structures
Subarnarekha Main Canal (SMC) (46.50km)	100%	100%	98%	98%
Subarnarekha Main Canal Distribution	100%	100%	100%	100%
Betnoti Branch Canal(BBC) (26.26km)	100%	100%	100%	100%
Betnoti Branch Canal distribution system	58%	22%	52%	41%
Jambhira Right Main Canal (24.789 km)	100%	100%	100%	100%
Jambhira Left Canal(82.46km)	100%	99%	78%	100%
Jambhira Left Main canal Distribution	42%	16%	37%	24%
Distribution system of Haldia Command	7%	86%	78%	58%

The irrigation potential created is 37,000 ha out of 69,933 ha. Kharif water supply is being provided in 20,000 ha CCA of Subarnarekha Irrigation Project.

LAND ACQUISITION AND R & R:**(a) Land acquisition:**

Total 4402.47 ha of land is required to be acquired for 1st phase AIBP. Out of the same, about 3658.24 ha have been acquired up to March, 2018, details of which are as follows:

Sl No.	Items	Total	Acquired Before AIBP	Balance under AIBP	Acquired up to 3/18 (AIBP)	Balance	
1	Unit – I : Dam & Barrage						
i	Jambhira Dam	2229.87	1427.28	802.59	802.59	0.00	
ii	Haladia Dam	430.72	430.72	0.00	0.00	0.00	
iii	Ichha Dam	2082.86	433.88	1648.98	1261.12	387.86	
2	Unit – II: Main Canal & Branches.						
i	Subarnarekha Main Canal & Distribution System.	Main Canal	448.21	400.85	47.36	47.36	0.00
		Distribution	150.68	0.00	150.68	150.68	0.00
ii	Haladia Distribution	60.40	0.00	60.40	2.93	57.47	
iii	Betnoti Branch Canal & Distribution system.	Main Canal	92.94	92.94	0.00	0.00	0.00
		Distribution	455.24	0.00	455.24	271.25	183.99
iv	Jambhira Left Main Canal & Distribution system.	Main Canal	544.12	0.00	544.12	544.12	0.00
		Distribution	693.10	0.00	693.10	578.19	114.91
v	Jambhira Right Canal & Distribution system.	Main Canal	84.15	84.15	0.00	0.00	0.00
		Distribution	0.00	0.00	0.00	0.00	0.00
Total		7272.29	2869.82	4402.47	3658.24	744.23	

(b) Rehabilitation & Resettlement:

The status of R&R is mentioned below.

Reservoir	Total DFs / AFs	RA sanctioned (Nos)	RA paid (Nos)	RA payment in progress (Nos)	DF evacuated (Nos)
Jambhira Reservoir (43 villages)	3848	3848	3848	0	2852 (Evacuation for 996 AFs not required)
Haladia Reservoir (9 villages)	3128	2607	2432	175	419 (Evacuation for 2085 AFs not required)
Subarnarekha Main Canal (21 villages)	189	189	187	2	187
Ichha Reservoir (7 villages)	4479	1370	614	756	9 (Evacuation for 711 AFs not required)
Total:-	11,644	8,014	7,081	933	3,467

ENVIRONMENT AND FOREST CLEARANCE:

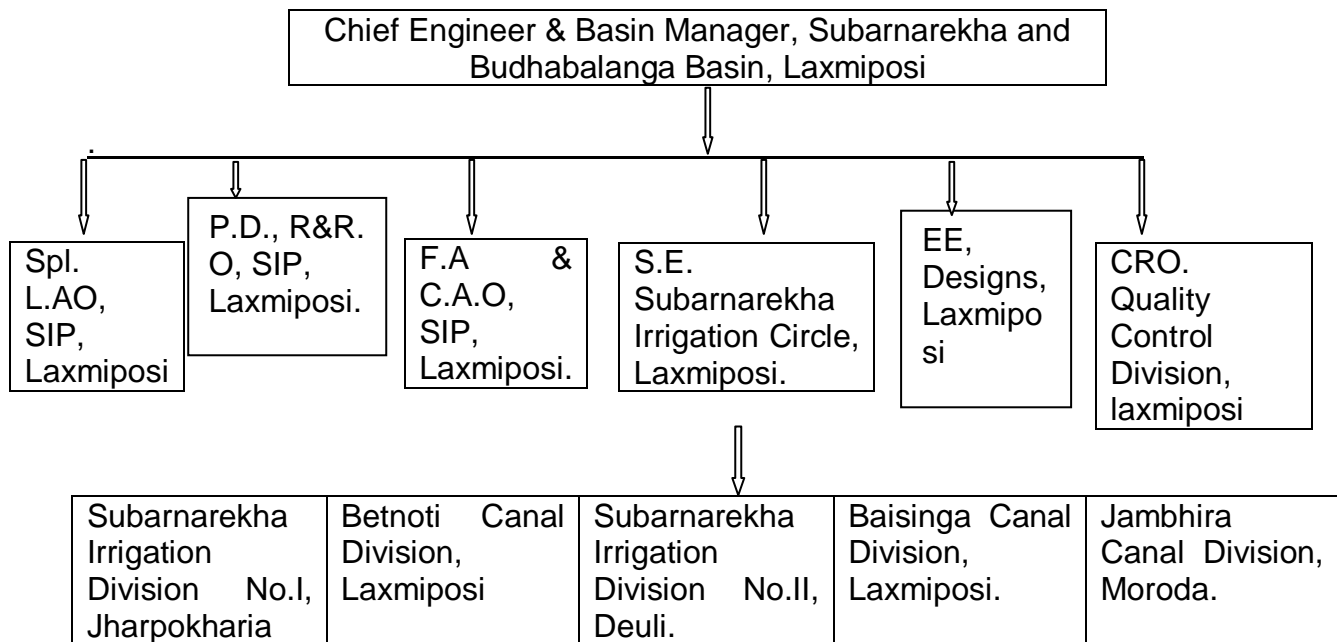
The total forest land involved in the Project is 1166.07 ha (submergence – 948.58 ha, Canal – 217.49 ha). Against the 1166.07 ha forest land, an equivalent non-forest land has been Identified and handed over to DFO, Baripada and DFO, Karanjia for compensatory afforestation. Full amount of Rs.116.61 lakh has been deposited with DFO, Baripada and DFO, Karanjia for compensatory afforestation. MOEF has given its approval for the release of 1166.07 ha of forest land for the project in August'1990. Environment clearance for the project has been received in 1984.

QUALITY ASSESSMENT:

A Quality Control Division at Laxmiposi, Baripada, headed by Chief Research Officer (CRO), has been set up in the Project directly under the control of Chief Engineer & Basin Manager. The CRO is assisted by three Assistance Research Officers (AROs) for quality control. Field laboratory has also been set up at the headquarters for carrying out necessary field tests and all the quality measures have been ensured during execution of the Project. Further, SQM visits the site regularly to assess the Quality aspect.

ORGANISATIONAL SETUP FOR THE PROEJCT:

The project team is headed by the Chief Engineer and Basin Manager, who is stationed at Laxmiposi, Baripada in Mayurbhanj District of Odisha. The schematic representation of the project Organization is shown as below:



(LAO & R&RO.-Land Acquisition & Rehabilitation Resettlement Officer)

Designs of major engineering structures is being done by the Design Division headed by Chief Engineer & Basin Manager, S. & B. Basin, Laxmiposi, while design of canals up to a discharge of one cumec is being done at the level of Superintending Engineer, Subarnarekha Irrigation Circle, Laxmiposi. The complicated design such as Aqueduct, Dam structures are being done by the Design wing headed by the Chief Engineer (Design) in the Office of the Engineer-in-Chief, Water Resources, Odisha, Bhubaneswar.

SUBARNAREKHA IRRIGATION DIVISION NO.I, JHARPOKHARIA:-

The jurisdiction of Subarnarekha Irrigation Division No-I, Jharpokharia is Subarnarekha Main Canal from RD 00Km to 37.00Km including its minors & sub-minors. Apart from this, the Division has been entrusted with monitoring, management and supervision of Construction of Haladia Earth Dam and Haladia Spillway. This Division also looks after repair & maintenance of all residential and non-residential buildings of Irrigation Colony at Jharpokharia. The duties include irrigation water supply and management in the created command area of Subarnarekha Main Canal & its distribution System from RD 00Km to 37.00Km. Coordinating and liaising with the counterpart officials of Water Resources Department, Govt. of Jharkhand in conducting Joint Technical Meeting and in ensuring required quantity of irrigation water supply in Galudihi Right Main Canal(GRMC), ultimately receiving the same at the head of Subarnarekha Main Canal (SMC) for supply of khariff water to the ayacut area of Subarnarekha Irrigation Project are major duties assigned to this Division.

a.Subarnarekha Main Canal from RD 00km to 37.00 Km:-

The Main Canal works from RD 00 km to 37.00 km is completed except slope failure zone from RD 7950m to 8920m. The work has been awarded to M/S OCC Ltd and is in progress.

The distribution system of Subarnarekha Main Canal completed and kharif irrigation is being provided.

The CAD&WM work started. 19nos of Pani Panchayats has been proposed for commanding 6988 Ha of cultivable area between RD 00KM and RD 37KM of SMC. Out of which election of 2nos of Pani Panchayats has already been completed so far and the election for rest Pani Panchayats has been targeted to complete by the end of July 2018.

Haladia Dam:

Construction Haladia Earth Dam was awarded to M/s Ratna-DDB(JV). Construction of Haladia Earth Dam excluding Spillway and Head Regulator Gap portion is under progress. The length of the dam is 3.55Km and earth dam section for a length of 1330m has so far been completed with U/S Rip rap, D/S Rock Toe and Vertical Chimney along with horizontal filter. The down stream turfing work has been completed for a length of 750m. The construction work in other reaches of the dam is in progress. Construction of earth dam has been targeted to be completed by end of March 2019.

Haladia Spillway:

The Spillway of Haladia Earth dam has already been awarded to M/s OCC Ltd. After completion of exploration of drill holes in the periphery location of Spillway i.e between RD 2600m and RD 2750m and geological logging made by the Engineering Geologist of GSI, Odisha Projects, Bhubaneswar, the design of Spillway of the Haladia Dam has been finalized and received during January 2016. The work has been awarded to M/s OCC Ltd as per instruction and approval of Govt in DOWR vides MOU No 01 of 2016-17 dated 22.06.16 amounting to Rs 149.51 Crores and targeted period of completion is 36 calendar months. (02.06.19). The construction work of U/S Return wall (both left and right) has been completed. The other components of Spillway i.e U/S wing wall, Abutments, Drainage Gallery, Adit, Piers and overflow section body portion are under progress and targeted to complete upto Crest level by the end of June 2018. Report of Sectional Model Study of the Spillway has been received from Hydraulic Research Division, Burla during April 2017. Preparation of Composite Model Study Report is under progress and is likely to be received by the end of June 2018.

Head Regulators:

Two nos of Head Regulators are offtaking from the Earth dam for providing irrigation through two nos of distributaries to the command area of the reservoir. The design drawing of both the head regulators has been approved by the Chief Engineer, Designs, Water Resources, Odisha, BBSR basing on the hydraulic particulars and Geological investigation report and Plate load test along the axis of the Head regulator. The tender for both the head regulators has been invited by the Chief Engineer & Basin Manager, Subarnarekha & Budhabalanga Basin, Laxmiposi during April 2018 and is under tender process.

Restoration of SMC from RD 7950m to RD 8840m:

Continuous failure of canal slope has been observed due to poor characteristics of soil and sub surface seepage in the canal from RD 7950m to RD 8920m. The hydraulic particulars along with all the test results carried out by CSMRS, New Delhi was submitted to the Chief Engineer, DR&QC, BBSR and subsequently referred to CWC as per recommendation TAC for Irrigation Projects for design of required section of concrete lining. The CWC, New Delhi has

approved the design and drawing of the concrete lining to be taken up between RD 7950m and RD 8920m during August 2015. After receipt of drawing the work has been awarded to M/s OCC Ltd vide MOU No 02/2016-17 amounting to Rs 67.28 Crores as per instruction of Govt in DOWR for executing the work. After closure of Khariff Water supply through SMC, work has been resumed and at present stage both side banking of canal embankments as per approved specification drawing are under progress and targeted to complete the banking of canals by end of June 2018.

BETNOTI CANAL DIVISION, LAXMIPOSI:-

The jurisdiction of Betnoti Canal Division, Laxmiposi is

- a. Subarnarekha Main Canal from RD 37.00 Km to 46.50 Km
- b. Haladia Distribution System
- c. Betnoti Branch Canal with its Distribution.

a.Subarnarekha Main Canal from RD 37.00 Km to 46.50 Km:-

The Main Canal works were completed except lining work from RD 38392m to 41,200m, VRB at RD 42,320m & 43,090m due to R&R issues. Above works have been awarded and lining work completed except Structure Gap portion executed by other agencies. Further slope failure zone from RD 45,322m to 45,522m (Left Bank), RD 45,557m to 45637m (Left Bank) & balance work from RD 45,100m to RD 45,450m (Right Bank) has been awarded to M/S O.C.C Ltd and work is in progress. The Distribution system is completed.

b. Haladia Distribution System:-

Remodeling work of old Haladia distribution has been completed except extension ayacut. LA proposal for extension ayacut has been submitted & in different stages of completion. One Package is in progress.

Kharif irrigation is being provided in the completed ayacut. CAD&WM work is to be taken up in Haladia distribution.

c. Betnoti Branch Canal with its Distribution.

The Branch Canal work is completed. The distribution system includes Baghuapal Distributary, Betnoti Distributary, Paunsia Distributary & direct minors and sub-minors. Total length of Distribution system directly off taking from BBC is 78.389 Km. Out of which 33.431 Km completed. Besides, Baghuapal distributary has been completed except from RD 3700m to 4700m due to land acquisition issue with Spinning Mill which is Sub-judice in Hon'ble High Court of Odisha.

For completion of Betnoti Branch Canal Distribution System, following Works along with LA is to be made.

- a) Betnoti Distributary length 17.916 Km with its distribution System – CCA 11372 ha
- b) Paunsia Distributary length 12.78 Km with its distribution system – CCA – 1438 ha.

a)Baghuapal Distributary

Baghuapal distributary has been completed except from RD 3700m to 4700m due to land acquisition issue with Spinning Mill which is sub-judice in Hon'ble High Court of Odisha. The counter affidavit for spinning mill case has been submitted to Govt. Advocate. The minors & Sub-minors for which LA cases have not been submitted will be taken up in UGPL.

b)Betnoti Distributary

Betnoti Distributary length 17.916 Km (CCA 11372 ha):-
Work is going on in four packages.

Further, two Distributary off takes from Betnoti Distributary which are furnished below :-

- a. Dhansul Distributary Length – 9.7 Km – CCA – 6433 ha.
- b. Nuagaon Distributary – Length – 7.18 Km – CCA – 3855 ha.

a. Dhansul Distributary :-

Work in progress in two Reaches from RD 00 to 7.00 Km.

LA for Reach from RD 7.00 Km to 9.7 Km 71% completed. Tender will be invited after 80% LA.

Further three Distributaries takes off from Dhansul Distributary, they are

i) Chuasole Distributary, ii)Agda Distributary & iii)Dahisahi Distributary

i)Chuasole Distributary

Work in Progress.

ii)Agda Distributary

Tender invited for two reaches. Tender for Third Reach will be invited after 80% LA.

iii)Dahisahi Distributary

20% LA acquired. Tender will be invited after 80% LA

b.Nuagaon Distributary

39% LA completed. Tender will be invited in phased manner. This Distributary has been transferred to Subarnarekha Irrigation Division No.II, Deuli.

Paunsia Distributary Length – 12.78 Km, CCA – 1438 ha

Work in progress in three reaches. Tender for the balance reaches will be invited after 80% LA.

SUBARNAREKHA IRRIGATION DIVISION NO.II, DEULI:

The jurisdiction of Subarnarekha Irrigation Division No.II, Deuli is Jambhira Earth Dam and LA of Ichha Dam.

Jambhira Earth Dam:-

Jambhira Dam work has been substantially completed.

Ichha Dam:-

Construction of Ichha Dam will be done by Govt. of Jharkhand. LA & R&R coming under Odisha portion has been taken up by Odisha. Total Pvt. land required is 5144.66 Ac, possession received is 4619.50 Ac, and 525.16 Ac of land is in progress.

BAISINGA CANAL DIVISION, LAXMIPOSI:-

The jurisdiction of Baisinga Canal Division, Laxmiposi is Jambhira Right Canal, Jambhira Left Main Canal from RD 00 km to 45.60 Km and Baisinga Branch Canal.

Jambhira Right Canal :-

Jambhira Right Main Canal (Length – 24.789 Km) Completed. Distribution system for a length of 24.908 Km completed. Khariff Irrigation for a CCA of 3530 ha provided. Formation of Panipanchayat completed. CADWM works is in progress through panipanchayats.

Jambhira Left Main Canal from RD 00 Km to 45.60 Km :-

Jambhira Left Main Canal from RD 00 Km to 45.60 Km completed with its distribution system. Kharif irrigation is being provided up to RD 40 Km since 2013 to a tune of 2500ha. CADWM works started through panipanchayats. Construction of Minor and Sub-Minors of JLMC have been completed in three no of packages. 7 Nos. of Pani Panchayats have been formed and fresh election has been completed. On Field Development works are being executed for smooth supply of water to the field through Pani Panchayats.

Baisinga Branch Canal:-

Due to stiff resistance by local people and subsequent approval of State TAC as well as Govt., it has been decided for termination of Construction of Baura Dam. As an alternate arrangement, a link canal of length 9.80 Km is to be constructed to feed Baisinga Branch Canal (L-58.56 Km) to create irrigation potential of 23,296 ha (original ayacut 32,355 ha) in the 2nd phase. The alternate proposal for execution of Link Canal has already been cleared by the State TAC and approved by the Govt. in DOWR. To compensate the CCA shortfall of Jambhira Left Canal system, it is proposed to construct 9.58 Km link canal and 26 Km Baisinga Branch canal which will provide irrigation to 3500 ha in the 1st phase. The LA required for above proposal is 433.58 Ac.

Thirty Five LA cases measuring 421.81 Ac is required for Baisinga Branch Canal up to RD 26 Km. 12 cases measuring 85.70 Ac acquired and Balance 399.81 Ac is in different stages. Tender invited up to 20 Km.

JAMBHIRA LEFT CANAL DIVISION, MORADA:-

Jambhira Canal Division, Morada is in charge of construction of Jambhira left main canal from RD 45630M to 82646M and its all systems with Basta Distributary and its system and Amarda Distributary and its system.

Balance Work:

Jambhira Left Main Canal

Construction of JLMC from RD 45630M to 63755M & RD 63755m to 82646M including all structures with cement concrete lining and service road with additional work and balance work is in progress.

a)Raibania Distributary – CCA 9700 Ha:-

Work is going on in 5 Reaches. 4 Reaches completed by June 2018 and 5th reach will be completed by March 2019.

b) Direct Minors & S/Ms– CCA – 6800 Ha.:-

Next priority has been given to direct minors & S/Ms which will irrigate 6800 ha. Tender invited in 3 reaches and work is in progress.

c)Basta Distributary – CCA 7900 Ha

Agreement drawn in two reaches of Basta distributary. Due to LA issues, balance portion of Basta Distributary will be taken up through UGPL.

Land Acquisition: -

- 1) All 32 villages are possessed for **Jambhira Left Main Canal** from RD 45630M to 82646M.
- 2) Out of 67 Nos villages 38 Nos are in possession for **Raibania Distributary and its system** and 2 Nos are in LA Process and 27 Nos proposal are to be resubmitted.
- 3) Out of 64 Nos villages 22 Nos are in possession for **JLMC Minors & Sub-Minors** and 7 Nos are in LA Process and 35 Nos proposal are to be submitted.
- 4) Out of 109 Nos villages 12 Nos are in possession for **Amarda & Basta Distributary and its system** and 28 Nos are in LA Process and 69 Nos proposal are to be resubmitted.

Chief Engineer & Basin Manager
S & B Basin, Laxmiposi