



**GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES**



**ANNUAL REPORT 2016-17
OF
LOWER SUKTEL PROJECT, BOLANGIR.**

INTRODUCTION

The Lower Suktel Irrigation Project is a Major Irrigation Project. It is proposed across the river Suktel, a tributary of river Tel, a Major right tributary of river Mahanadi in Odisha. The dam site is located near village Magurbeda 20 Kms from Bolangir town in the Bolangir district Odisha. Bolangir district is predominantly a drought affected area and coming under K.B.K. district of Odisha. The scope of the Project includes construction of 1410 mtrs long and 30 mtrs maximum of height Earth Dam with a spillway of 177 mtrs long located centrally across river Suktel and two main canals, such as right main canal of length 23.84 Kms and the left main canal of length 10.76 Kms.

After completion of Project, 31830 Ha land of Bolangir & Subarnapur district will be irrigated and the ground water level of Bolangir District will rise sufficiently high and also the water supply to Bolangir Town will be provided. Despite stiff resistance from the people of affected villages, the Project started functioning after foundation stone laid by Hon'ble Chief Minister on 24.11.2001.

Due to repeated agitation & strong opposition by the anti-Project people, the Project work could not achieve the target. Since beginning of the Project so many attempts haven taken to start/resume the work i.e. Dam & Spillway on the following dates 8.3.07, 9.5.07, 15.5.07, 1.11.07, 24.1.08, 22.2.08, 24.4.08, 13.5.08, 22.5.08, 2.6.08, 19.1.09 & 4.2.2010, but in vain.

Once again on dtd. 27.09.2012 Members of Lower Suktel Budi Anchal Sangram Parishad did not allow the Project authorities to resume the Project work. After that, the Government has decided to have a tri-par-tite meeting on 22.12.12 with Chief Secretary, Government of Odisha, LSBASP and Lower Suktel Action Committee. But the Lower Suktel Budi Anchal Sangram Parishad did not attend the said meeting. In the said meeting it was decided to resume the Project work on 15.01.13 and directed the Principal Secretary to Government, Department of Water Resources to visit the submerged area of Lower Suktel Irrigation Project and have a discussion with the submerged people to find out the solutions. Accordingly the Principal Secretary to Government, DoWR has visited the submerged village on 3.1.2013 and discussed with the submerged people, but in vain. As per Lr. No. 8502 dtd. 14.03.2013 of the Principal Secretary to Government, DoWR has instructed to the Project authorities to take initiation to resume the Project work after due consultation with District Administration. Accordingly after a lot of interactions, motivations & discussions the people were convinced and after consultation with District Administration, Police Authority and supporters of Lower Suktel Project, the Spillway work has resumed on 08.04.2013.

Though some agitators led by Lower Suktel Budi Anchal Sangram Parishad has opposed and tried to trace pass to the working place, but the Police has taken them to their custody and work started smoothly. Now the Spillway work and Dam work of Lower Suktel Project is going on in presence of Police. The Lower Suktel Budi Anchal Sangram Parishad has still opposing the Project and the people of submerged villages were demanding the payment as per LA & RR Policy 2013. The Government has now decided to make payment as per LA & RR Policy 2013 with ex-gratia benefit. However the other ancillary project activities are also going on and the project has been targeted for completion by June' 2020.

SALIENT FEATURES

I. GENERAL

- | | | | |
|----|-------------------------|---|------------------------------------|
| 1. | State | : | Odisha |
| 2. | District | : | Balangir |
| 3. | Sub-Division | : | Balangir |
| 4. | Village | : | Near village Magurbera |
| 5. | River | : | Suktel (a tributary of Tel River) |
| 5. | Basin | | Mahanadi |
| 6. | Nearest Railway station | : | Balangir |

II. LOCATION

- | | | | |
|----|-------------------|---|-------------------------------|
| 1. | Latitude | : | 20 ^o -46'26" N |
| 2. | Longitude | : | 83 ^o -20' 51" E |
| 3. | Toposheet | : | |
| | a) Dam Axis | : | 64 P/6 |
| | b) Catchment Area | : | 64P/1,P/2, P/5, P/9, L/13&/14 |
| | c) Ayacut Area | : | 64 P/5, P/9, P/6 |

III HYDROLOGY

- | | | | |
|----|--|---|--------------|
| 1. | Catchment area | : | 1275 Sq. km. |
| 2. | Catchment area intercepted by Upper Suktel Project | : | 45.0 Sq. km. |
| 3. | Net Catchment Area | : | 1230 Sq. km. |
| 4. | Maximum Annual Rainfall | : | 1775.21 mm |
| 5. | Minimum Annual Rainfall | : | 726.95 mm |
| 6. | Mean Annual Rainfall | : | 1267 mm |
| 7. | 75% dependable annual rainfall | : | 1094 mm. |
| 8. | 75% dependable annual runoff | : | 21720 ham. |

IV. FLOOD

- | | | | |
|----|--------------------------------|---|-------------|
| 1. | Design Flood at Dam Site | : | 8540 Cumecs |
| 2. | High Flood Level on 30.08.1982 | : | 185.280m |

V. PRINCIPAL LEVELS

- | | | | |
|----|-------------------------------|---|-----------|
| 1. | Top Bank Level (T.B.L.) | : | 210.00 m. |
| 2. | Maximum Water Level (M.W.L.) | : | 206.00 m. |
| 3. | Full Reservoir Level (F.R.L.) | : | 206.00 m. |
| 4. | Dead Storage Level (D.S.L.) | : | 197.00 m. |
| 5. | Free Board | : | 4.00 m. |

VI. RESERVOIR CAPACITIES AND SUBMERGENCE

1.	Gross storage at FRL	:	32,028 ham.
2.	Dead storage at DSL	:	5,685 ham.
3.	Live storage between FRL & DSL	:	26,343 ham.
4.	Submergence at FRL	:	5324.55 ha.
5.	Forest Land Submerged	:	583 ha.
6.	Private Land Submerged	:	3955.55 ha.
7.	Govt. Land Submerged	:	786 ha.
8.	Population to be affected	:	27636 (9212 families) by 2008-09 (on the basis of survey of 2002-04)
9.	No. of villages affected	:	26 (16 Nos. fully submerged and 10 Nos. partly submerged)
10.	Transmission Line affected	:	Nil
11.	Road communication submerged	:	10.2 km. (2.2 km., SH & 8 km. VR 2350 Families)
12.	Tribal population affected	:	2350 Families
13.	Forest area affected under canal system	:	55 ha.
14.	Agriculture Land affected under canal system	:	801 ha.

VII. DAM

a. MAIN DAM

1.	Type	:	Earth Dam
2.	Length	:	1410 m.
3.	Max height	:	30.00 m.
4.	Top width	:	6.00 m.
5.	Demand of Khariff	:	14,806 ham.
6.	Demand of Rabi	:	6021.95 ham.
7.	Water Supply	:	1780.00 ham.
8.	Total	:	22617 ham.

b. SPILLWAY

1. Location : Centrally located
2. Type : Ogee type
3. Length : 177.00 m.
4. No. of Bays : 10 nos.
5. Size of Gates : 15 m x 9.0 m.
6. Crest level of spillway : 197.00 m.
7. Type of gates : Radial
8. Thickness of Piers : 3.00 m.

c. DYKES

a. Right Dyke

1. Position : Right side
2. Type : Homogenous Earth Fill
3. Length : 890 m
4. Maximum Height : 16 m
5. Top Width : 6 m

b. Left Dyke

1. Position : Left side
2. Type : Homogenous Earth Fill
3. Length : 412 m
4. Maximum Height : 3 m
5. Top Width : 6 m

VIII DETAILS OF COMMANDS

1. Gross Command Area (G.C.A.) : 33,571 ha
2. Culturable Command Area (C.C.A.) : 31,830 ha.
3. C.C.A. of Right Canal : 21,630 ha.
4. C.C.A. of Left Canal : 10,200 ha.
5. District Wise C.C.A. : Bolangir : 29,841.4 ha.
Sonepur : 1988.6 ha.
6. Irrigation :
 - a) Khariff : 27,055.5 ha.
 - b) Rabi : 13,368.6 ha.
 - c) Annual : 40,424.1 ha.

IX CANAL SYSTEM

1. Length of Main Canal
 - a) Left Main Canal (L.M.C.) : 10.58 km.
 - b) Right Main Canal (R.M.C.) : 24.18 km.
2. Head Discharge
 - a) Left Main Canal (L.M.C.) : 10.200 Cumecs.
 - b) Right Main Canal (R.M.C.) : 25.508 Cumecs.
3. C.C.A. (Command)
 - a) Left Canal System : 10,200 ha.
 - b) Right Canal System : 21,630 ha.
4. Block wise C.C.A.
 - a) Balangir District : 14,885 Ha.
 - b) Sonapur District : 1988 Ha.
5. Sill Level of Head Regulator
 - a) Left Main Canal (L.M.C.) : 195.550 m.
 - b) Right Main Canal (R.M.C.) : 194.500 m.
6. FSL at Canal Head
 - a) Left Main Canal (L.M.C.) : 196.50 m.
 - b) Right Main Canal (R.M.C.) : 196.50 m.
7. Bed Width
 - a) Left Main Canal (L.M.C.) : 3.40 m
 - b) Right Main Canal (R.M.C.) : 14.10 m.
8. Full Supply Depth
 - a) Left Main Canal (L.M.C.) : 0.95 m
 - b) Right Main Canal (R.M.C.) : 2.00 m.

X. COST

1. Cost of Head Works (Unit-I) : Rs. 186332.00 Lakhs
 2. Cost of Canal System (Unit-II) : Rs. 58477.00 Lakhs
 3. Total : Rs. 244809.00 Lakhs
- Or Say : Rs. 2448.09 Cr.
4. Cost per ha. of Annual Irrigation : Rs. 769114.04

XI. BENEFITS

1. Anticipated Additional Annual Produce : 13,10,400 Tonnes
2. Value of Additional Produce : Rs. 46,241.61 Lakhs
3. B.C. Ratio : 1.35

ACHIEVEMENT

During the Financial Year 2016-17 the expenditure made for an amount of Rs. 24223.23 Lakhs out of total budget allocation 24394.00 Lakhs which comes to 99 % . The Expenditure incurred in different Head as follows:

a) L.A. & R. R.	Rs. 17915.17 Lakhs
b) Establishment	Rs. 790.85 Lakhs
c) Works	Rs. 5517.21 Lakhs

An amount of up-to-date expenditure Rs. 87119.85 Lakhs has been incurred out of approved estimated cost of Rs. 2448.09 Lakhs.

1. HEAD WORKS

(A) EARTH DAM: -

Agreement No: - 1F2/2013-14; Original Amount: - Rs. 59,90,20,211.00
Date of commencement:-18.04.2013; Revised Amount:- Rs.71,58,52,793.00
Stipulated date of completion: - 30.09.2018; EOT applied up to :- 30.09.2018

Awarded to O.C.C. Ltd. for agreement amounting to Rs. 59.90 Cr. It has been revised to 71.59 Cr. as per 1st Interim Deviation duly approved by Government. Work started from 18.04.2013 amid Police Security and continuing till date. The base stripping of Dam for 1360 Mtr. length and excavation of cut off trench of 1360 Mtr. length with Drilling & Grouting and geological mapping have been completed. Sand filling in downstream area for horizontal filter and Rock toe has been completed. Earth filling work has been hampered since February'2015 due to protest by the villagers of Khuntpali. The Up-stream Riprap work is under progress. Value of work done so far up to March'2017 is Rs.33.17 Cr.

(B) SPILLWAY: -

Agreement No:- 2F2/2011-12; Amount:- Rs. 140,73,72,793.00
Revised Amount: - Rs.227,92,53,501.00; Date of commencement:-21.12.2011
Stipulated date of completion: - 31.03.2017 ;EOT sanctioned up to 31.03.2017

Awarded to OCC Ltd. for agreement amounting to Rs. 140.74 Cr. It has been revised to 227.93 Cr. as per 1st interim deviation duly approved by Government. Work started from 8.4.2013 amid Police Security and continuing till date. The foundation excavation of Right abutment & Wing Wall of length 193.5 Mtr and body wall of entire length 177M have been completed . Excavation of the Left side non over flow section and downstream wing and returned wall has been completed. The geological mapping by GSI has been completed. Concreting in the Spillway foundation and super structure is in progress. Value of work done so far up to March'2017 is Rs.89.46 Cr.

(C) DYKE :-

Preliminary survey for Design & Drawing completed. Processing for submission of data for issue of drawings is in progress & the work will be taken up through M/s OCC Ltd. on receipt of drawings & after availability of borrow earth.

2.DISTRIBUTION SYSTEM

As per the Government decision the open Canal System has been changed to Under Ground Pipe Line Irrigation System. In view of this a feasibility study for "Providing Irrigation facilities in the proposed command area under the Right Canal System (21630 Ha) and Left Canal System (10200) of Lower Suktel Project by laying underground pipe conduits instead of flow irrigation through open canal" has been taken up and Shree Mahalaxmi Enterprises, Regd. Office 18, Venkatesh Apt. Anand Nagar, Old Sangavi, Pune-27, Bhubaneswar Office: N2/188, IRC Village, Bhubaneswar 751015 has submitted the feasibility report and the same has been submitted to Govt. in DoWR for kind approval. Due to this change in the scope of the CCA can be enhanced from 31830 Ha to 51000 Ha.

3.LA & RR STATUS

3602.47 Ha land has already been acquired out of total land required of 5306.874 Ha which comes 67.88 % . The Land Acquisition Assistance payment of Rs. 11228.11 lakhs has been paid to the affected people .

People of 15 submerged villages have been paid towards the L.A. compensation and for the rest 14 villages; the payment will be made as per L.A. & R.R. Act'2013 for which the process is going on.

The preliminary infrastructure works of R.R. Colony Larkipali, Sadeipali & Khujenpali have been completed. 946 nos of displaced families have been paid 1st phase Rehabilitation Assistance in two Dam base villages and other two villages. 277 nos of displaced families have been paid final dose of R.A. and started shifting to their new self relocation site. 100 nos of displaced families have been allotted Govt. Land for their resettlement and they have started construction of their houses. It has been planned to complete L.A. & R.R. payments of all the villages by 2019.

Cut off excavation in progress



Drilling and grouting in Dam cutoff at RD 1396



DRILLING WORK IN PROGRESS



VERTICAL CHIMNEY IN PROGRESS



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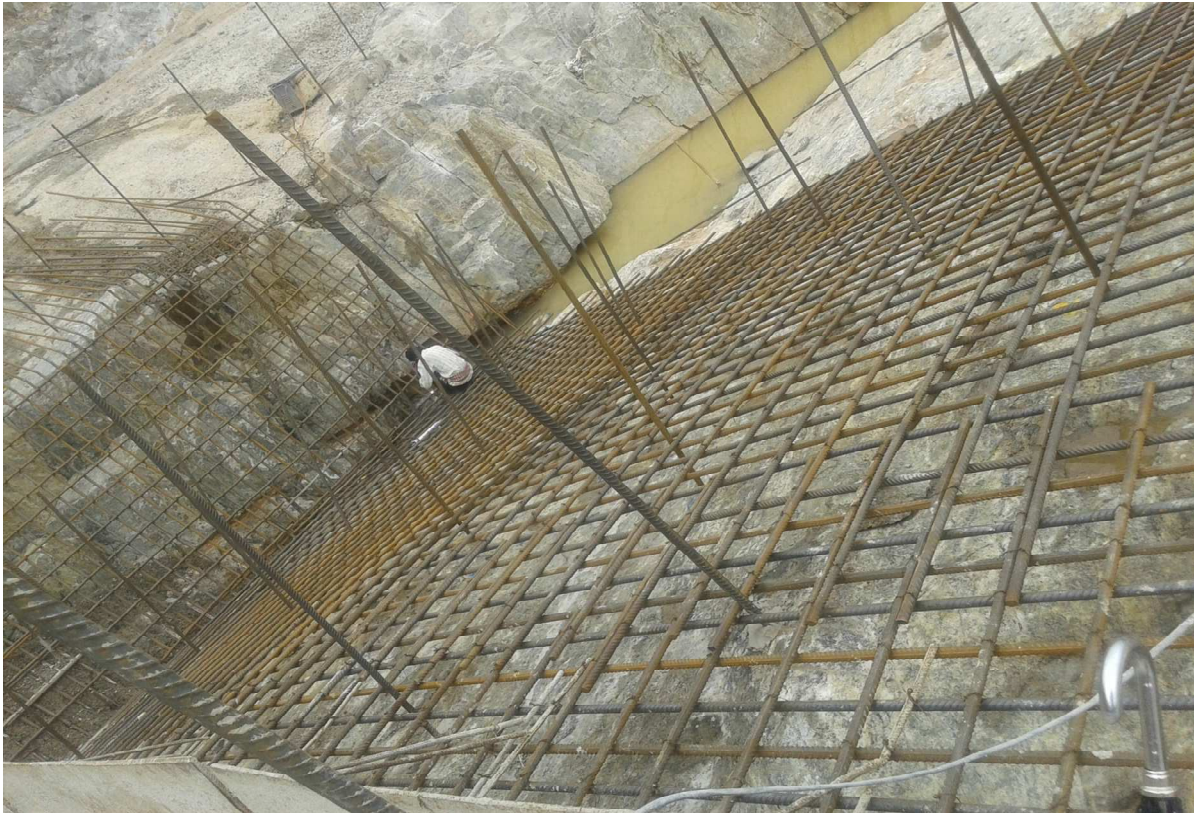
ROCK TOE WORK IN PROGRESS



RIPRAP WORK IS IN PROGRESS



SHEAR ZONE TREATMENT



SIDE FILLING OF WING WALL



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View of U/S Right Wing Wall



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View of D/S Right Wing Wall



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SPILLWAY WORK IS IN PROGRESS



Reinforcement work in progress of drainage Gallery (Block No.9)



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Reinforcement of spillway drainage Gallery (Block No.7)



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SLUMP TEST OF CONCRETE



SITE VISIT OF THE PRINCIPAL SECRETARY ON 18.02.2017



SITE VISIT OF THE E.I.C (P&D) ON 8.03.2017

