KRISHNA BHAGYA JALA NIGAM LIMITED
(A GOVERNMENT OF KARNATAKA UNDERTAKING)

Brief note
FOR
“NANDAWADAGI LIFT IRRIGATION SCHEME”
KARNATAKA

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OFFICE OF THE
CHIEF ENGINEER
KBJNL, O & M ZONE,
NARAYANPUR.
1. GENERAL REPORT

Lingsugur & Manvi taluks of Raichur district are economically backward areas comprising of about 72% of local population with agriculture as their main source of occupation. The annual rainfall in these regions is very much lower in comparison to the state average and hence these farmers are growing only dry crops being water scarce area. This has reduced the area to drought prone with irrigation area less than 20% of the total area. There is always a risk of possible crop failures or reduced yields due to uncertain and scanty rains.

The topographical features of the area coming under Lingsugur and Manvi taluks of Raichur district do not facilitate supply of water through gravity canal system from the Narayanapur storage dam as the areas are lying above the Maximum Full Supply level of Narayanapur Dam. Hence proposing a Lift Irrigation Scheme to cater the required water to these affected areas is more feasible considering the flat topographical terrain.

The average land holding size of farmers is 3.74 ha. There are more marginal farmers in this area, i.e. 31% of total area is held by more than two-thirds of the farmer’s population where as only 8% of the farmers posses 30 percent area.

Jowar is the most important crop covering 41 percent of the area followed by Bajra (12.8%) and Groundnut (12.4%). High yielding crops are re confined to 12% of the area where supplementary sources of irrigation like tanks, wells / tube wells are available. Cotton, a bi-seasonal crop is grown in only 4% of the area.

Under normal conditions in the region, the average yield in tonnes per hectare for major crops is very low compared to the state average. For instance, the average yield in the case of Jowar is about 0.6 tonnes compared to 0.9 tonnes for the state. The Groundnut average yield is 0.5 tonnes while it is 0.7 tonnes for the state. There may be slight variation in yield depending on timing and adequacy of rainfall.

The area is semi arid having climate suitable for round the year cropping. The soils are suitable for intensive cropping and irrigation. Hence providing Irrigation facilities to these drought prone areas is the best strategy in improving the per capita income and consequent standard of living of the farmers.
It is therefore proposed to provide irrigation facilities for an area of 54000 hectares of drought prone areas of Lingsugur and Manvi Taluks of Raichur District by Micro irrigation and considering an irrigation intensity of 100%.

The proposal to provide irrigation facilities for an area of about 54000 hectares with water requirement of 6.0 TMC under micro irrigation covering the drought prone areas of Lingsugur and Manvi Taluks of Raichur District was submitted and placed before 173rd TSC dated 8th August 2013. TSC recommended to prepare the proposal restricting the ICA to the extent of 3.75 TMC of water available. Now, the proposals are prepared as per TSC’s observations by restricting the ICA to 36,100 Ha. to the available allocation of water. Now, 3.75 TMC of water has been allocated for Nandawadgi Lift Irrigation Scheme vide G.O. No. WRD/308/KBN/2013, Bangalore dated 01-03-2014.

Therefore, it is proposed to implement Nandawadgi Lift Irrigation Scheme by lifting 3.75 TMC of water from the back water of Narayanapur Reservoir and accordingly designing the head works and planning and designing the civil works for ultimate utilization of 6.0 TMC as per the G.O.

Nandawadgi Lift Irrigation Scheme comprises of lifting water from the foreshore of Narayanapur Reservoir, i.e. from R.L. 486.00 m to R.L. 550.00 m. An Intake canal is proposed from the foreshore to the sump and pump house with a provision to cater to the ultimate capacity of 6.0 TMC. Pump house is proposed near out crops of Tondihal village under Lingsugur taluk. The location is best suited as the depth of foundation for Pump house and sump is lesser due to the presence of out crops and thus economical. Based on this, strip survey work was carried out along the Raising Mains and Intake canal and also block survey work was conducted at Pump house and sump locations. The water is carried through 14 Kms long Raising Main for 3.75 TMC and delivered at RL 550.00 m where a Delivery chamber with a provision to cater to the ultimate capacity of 6.0 TMC is constructed.

**Salient features of the proposed Project**

- Lifting 3.75 TMC of water from the foreshore of Narayanapur Reservoir from R.L. 486.00 m to R.L. 550.00 m and to irrigate 36,100 hectares of drought prone areas of Lingsugur and
Manvi Taluks of Raichur District by Micro irrigation and considering an irrigation intensity of 100%.

- Intake canal of 400.0 m is proposed from foreshore to the Sump and pump house and located near Tondihal village, Lingsugur taluk. Raising Main of 14.00 Kms is proposed to carry the water from the pump house to Delivery chamber (DC) near Nandawadagi village, Hungund taluk, Bagalkot district.

Estimates are prepared for Nandawadgi LIS by adopting the W.R.D. Schedule of Rates for the year 2013-2014 for most of the items and for items, that are not covered in the W.R.D. SR, the relevant PWD SR, i.e. Bellary Circle for the year 2013-2014 is adopted. Estimates of all the electrical works have been prepared by using KPTCL SR, Bellary Circle for the year 2013-2014.

Presently, this Estimate envisages construction of Intake canal, Sump and pump house, Raising Main and Delivery chamber (DC) including electro mechanical works and civil works for electro mechanical works including providing 110 KV power line from 220 KV / 100 KV Marol Substation. Metallic volute pumps have been proposed in the Estimate as per the earlier comments and approval of E.R.C.

The following provisions are made in the Estimate of Nandawadgi LIS :-

- Construction of Intake canal with a provision to cater to the ultimate capacity of 6.0 TMC for 400.0 metres length from foreshore of Narayanapur reservoir to the sump.
- Construction of transition from Intake canal to sump with a provision to cater to the ultimate capacity of 6.0 TMC.
- Construction of sump and pump house of size 53 x 11 m with a provision to cater to the ultimate capacity of 6.0 TMC.
- Construction of 2.4 m Dia. 14.9 mm thick MS raising main for a length of 14.0 Kms.
- Construction of Thrust blocks and Anchor blocks and structures across raising main.
- Construction of Delivery chamber (DC) with a provision to cater to the ultimate capacity of 6.0 TMC.
- Supply and installation of electro mechanical works, i.e. gates for regulation of water.
- Construction of Sub station
- Providing 110 KV power supply line from Marol Substation to Tondihal head works.
- Linking of sub station to the nearest electrical grid.

**Command Area Details**

District wise and taluka wise command area of Nandawadagi LIS for 3.75 TMC of water allocation schemes

<table>
<thead>
<tr>
<th>No</th>
<th>Schemes</th>
<th>Achukat (Ha)</th>
<th>Name of the District and Taluk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nandawadagi LIS</td>
<td>500</td>
<td>Bagalkot Hungund</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27600</td>
<td>Raichur Lingasgur</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8000</td>
<td>Raichur Manvi</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>36100</strong></td>
<td></td>
</tr>
</tbody>
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**PROJECT LOCATION MAP**

*All sites are not shown at this map scale.*
*For International/State boundaries and Coast Line refer to Survey of India maps.*