

Gondi Modernization Project, Bhadravathi Taluk, Shivamogga District

There are seven river systems flowing through Karnataka with a number of tributaries that form a source of irrigation.

Bhadra is one of the two major rivers in the Krishna Basin originating from Kuduremuka located in the Western Ghats flowing east across the Deccan plateau. The Bhadra meets the Tungariver at Koodli village near Shivamogga. The combined river continues east as the Tungabhadra, a major tributary of the Krishna, which joins the Bay of Bengal. The Bhadra is one of important rivers that flows through Shivamogga District.

The Karnataka State has constituted Krishna Bhagya Jala Nigam Limited under the company's Act of 1956 with a view to expedite the Irrigation works in the State.

The Karnataka Neeravari Nigam Limited (KNNL) was incorporated under the company's Act as a wholly owned company of the Government of Karnataka to expedite the ongoing Irrigation project in Krishna and Godavari Basins.

The Gondi project comes under Krishna Basin.

GONDI Anicut

The Gondi Anicut is built across river Bhadra, near Gondi village which is 11.56 Km from Bhadravathi Town, Bhadravathi Taluk, Shivamogga District. It is situated at a latitude 13° 46' N and longitude 75° 41' E. Gondi Anicut is located at 14.50 km downstream of Bhadra Reservoir.

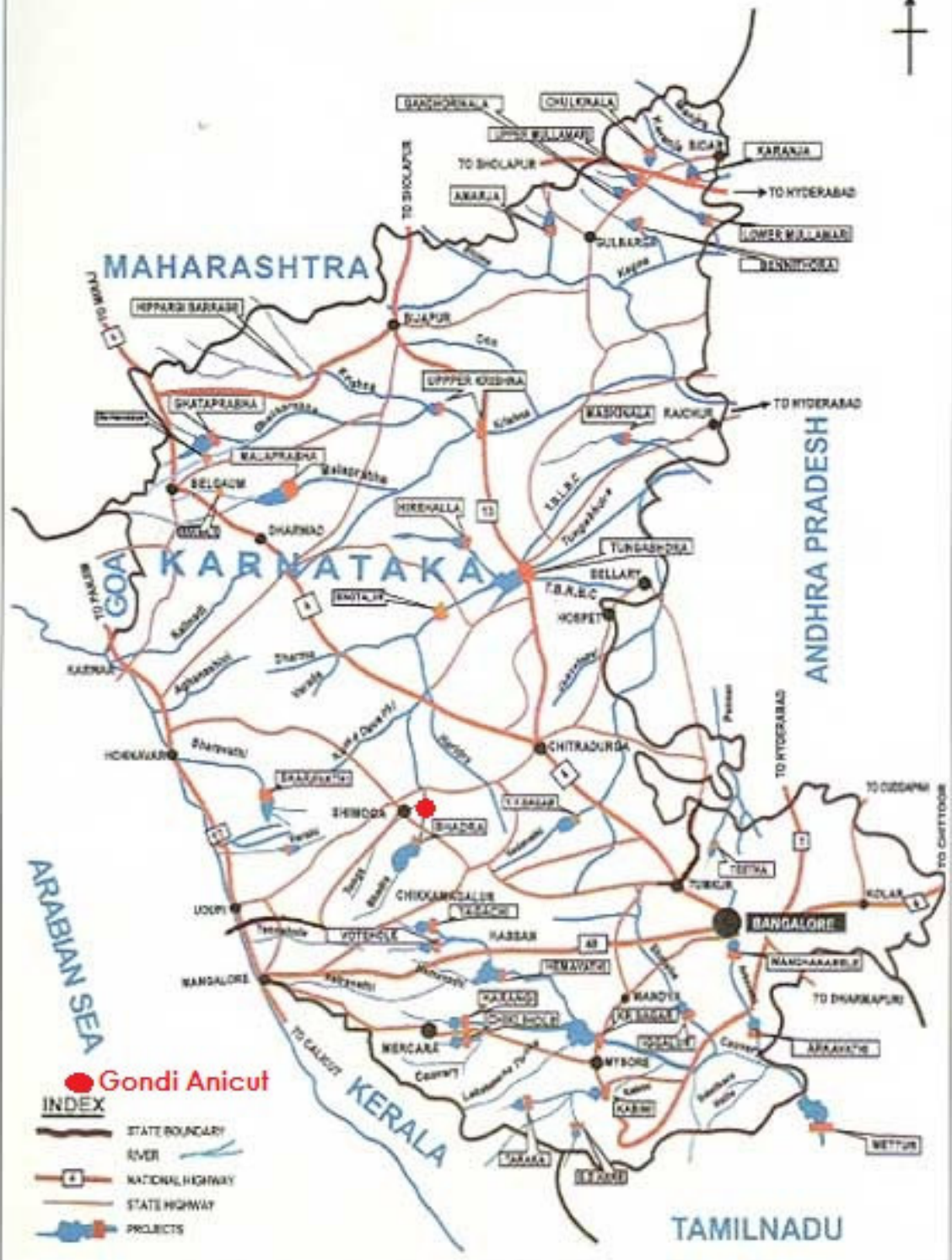
The construction of the Anicut was started during 1916 and completed during 1926 with an estimated cost of Rs. 16.00 lakhs.

The Right bank canal was commissioned during 1926-27.

The Left bank canal started during 1951 and completed during 1953-54.

The GCA is 5060 Ha and the CCA is 4600 Ha.

LOCATION MAP OF IRRIGATION PROJECTS IN KARNATAKA



● Gondi Anicut

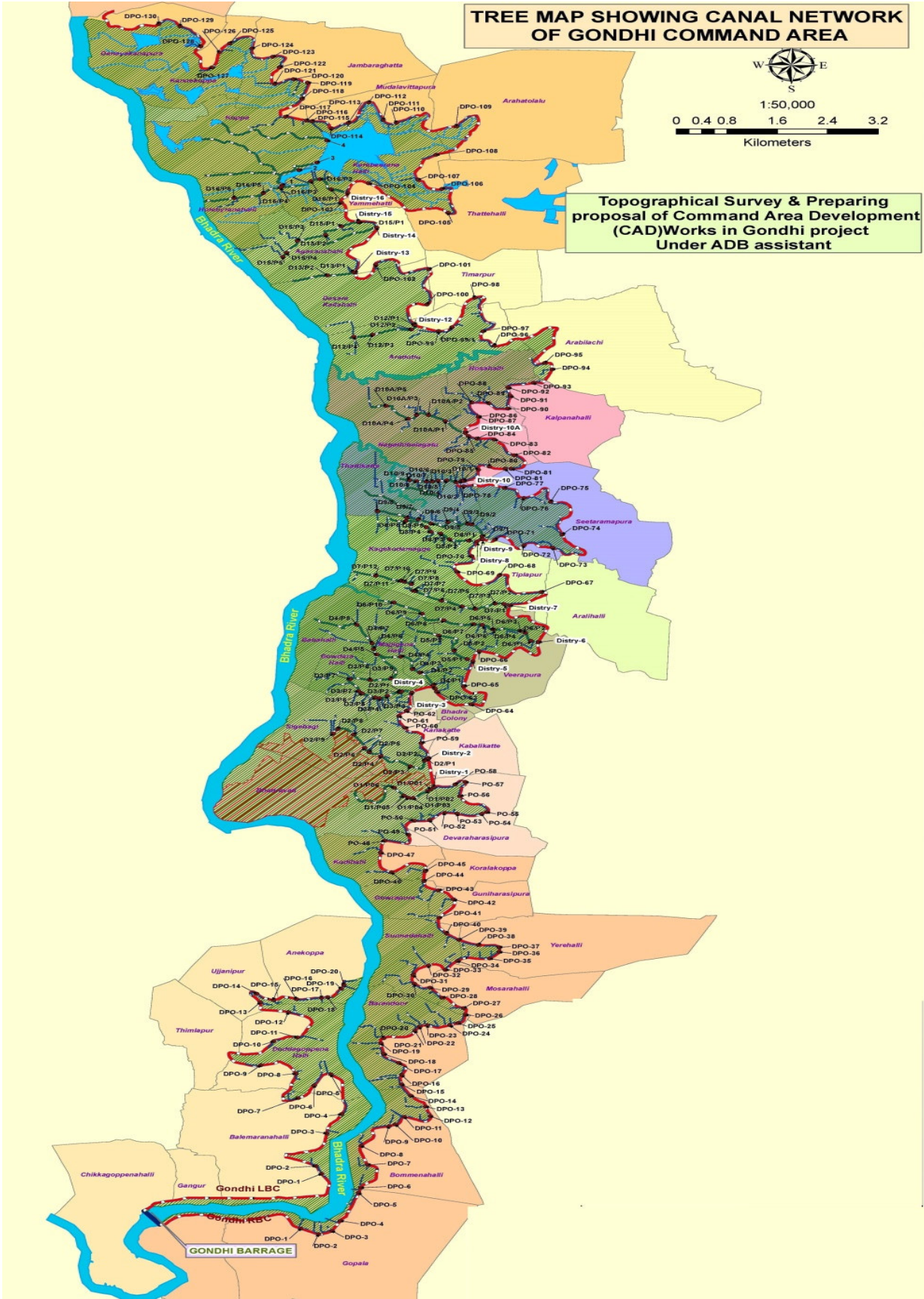
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TREE MAP SHOWING CANAL NETWORK OF GONDHI COMMAND AREA



1:50,000
0 0.4 0.8 1.6 2.4 3.2
Kilometers

Topographical Survey & Preparing
proposal of Command Area Development
(CAD) Works in Gondhi project
Under ADB assistant



Canal System

There are two main canals originating from Gondi Anicut from Left and Right flanks. The Left Bank Canal is 14.5 km long with 20 DPOs for a CCA of 212 Ha and full potential is created under this canal. The design discharge capacity of the canal is 0.56 cumecs (20 cusecs). The Right Bank Canal is 74 Km long with 16 distributaries and 130 DPOs to cater to a CCA of 4380 Ha. The design discharge capacity of the canal is 7.50 cumecs (265 cusecs).

The entire canal system is unlined.

Command of the Scheme

The area proposed for Irrigation under the Left Bank Canal is 212 Ha and under the Right Bank Canal is 4380 Ha to grow paddy and sugarcane.

Salient Features of the Project

1. Location	Near Gondi village, 11.56 Km from Bhadravathi Town in Shivamogga District	
2. Catchment Area	2805 Sq km (1968 Sq km intercepted by Bhadra Reservoir)	
3. Location	Latitude 13° 46' N Longitude 75° 41' E	
4. Length of river upstream of Anicut	14.50 km	
5. Maximum discharge anticipated	3400 m ³ /sec	
6. Storage Capacity	0.37 TMCFT	
7. Anicut		
Length of Anicut	250 m	
Bottom width of Anicut Foundation	3.72 m	
Height of Anicut above Foundation	3.65 m	
Top level of Crest	603.100 m	
Sill Level of LBC and RBC	601.200 m	
Project commenced during	1916-17	
Water Allowed in RBC	1926-27	
Water Allowed in LBC	1953-54	
8. Canals	Left Bank Canal	Right Bank Canal
Length	14.50 Kms	74.60 Km
GCA 5600 Ha		
CCA 4600 Ha	212 Ha	4380 Ha
Crop Pattern	Paddy and Sugarcane	Paddy and Sugarcane

Discharge	0.56 m ³ /sec (0.351m ³ /sec proposed)	7.50 m ³ /sec (4.16 m ³ /sec proposed)
Duty for atchkat	50 Acres/cusecs	40 Acres/cusecs
DPO	20	130
Distributaries	-	16
Length of Distributaries	-	34 km
Balancing tanks	-	20 (CCA area of tanks included in the CCA of canal network)

Need for Modernization and Components of the Project

The construction of the anicut was completed in 1928 and is almost 90 years old. However the Anicut is in good condition requiring only small repairs for the sluice of the canal. But the headworks are not functioning properly and the entire canal system is unlined and has lost its shape over the years. Due to this there is lot of transmission and seepage losses leading to uneconomical use of water. The canal bed is scoured in some portion and silted up heavily in some reaches. Due to operation problems and insufficient maintenance funds, the canals could not be maintained properly over a long period. Due to this, weeds have covered the sides and bed of the canal obstructing the free flow of water.

Majority of the Pipe outlets are in dilapidated condition, therefore proper controlling of supply could not be done. This affects the growing of crops under the Pipe outlets.

The Cross Drainage Works such as Cart Track Crossing, Bridges are also in very bad condition and some bridges have wholly collapsed. This is affecting the transportation of Agricultural products. The farmers have to take long paths to connect to the main roads adding to the overall costs of produce and making it unviable to the farmer.

Other drainage works such as inlets, outlets escapes are totally absent in the system, which leads to more wastage of water and the canal is vulnerable to overflow damages.

In Gondi command area the water utilization is more than the crop requirement from records (Monthly canal withdrawal statement) as the withdrawal of water from each outlet is much more than the required discharge. This is due to uncontrolled pipe outlets and bad condition of Field canals.

Therefore, the main aim of modernization of the existing Gondi canal network is to improve irrigation services delivery by implementing integrated water resources management (IWRM). The program is expected to increase water use efficiency, and provide economic opportunities, in particular to women, and improve rural incomes.

Some civil works

It was found that 40 of the 41 inlets along the Left and Right Bank Canals need to be reconstructed.

The 25 relieving weirs on either side of the Left and Right Bank Canals are to be reconstructed based on the proposed Canal bed level and Full Supply depth of the canal in the respective reaches. The downstream wall portion in all the relieving weirs have to be cleared and proper protection has to be provided.

The majority of the Pipe outlets and cross drainage works are constructed in stone masonry. They are in dilapidated condition. This leads to heavy leakage of water from the canal.

There are 20 authorized and approved Pipe outlets in LBC & 12 head sluice, 4 POs & 130 DPOs in RBC, which are constructed without controlling arrangements. They are uncontrolled; therefore, there is no proper regulation of the water to fields through the outlets, which leads to wastage of water. All the pipe outlets have to be reconstructed as per the proposed canal bed level and FSD.

Activities taken up under Modernization

- Repairs and improvements to Anicut
- Repairs to gates and sluices of the Anicut
- Re-sectioning and concrete lining of Main canal and distributaries
- Construction of new structures along the canal such as cart bridges, road bridges, inlets, relieving weirs, pipe outlets
- Resectioning and concrete lining of Field irrigation channels (CAD works) and construction of structures
- Repairs and improvements to office buildings
- Providing Telemetry

Beneficiaries

- **Farmers** – due to improved service at the most economical cost, and from management processes that empower them to participate in strategic decisions based on management principles;
- **Other water users** - through recognition of their service requirements or improved allocation;
- **Irrigation staff and managers** - through simpler and easier to achieve performance enhanced and incentivized methods, in return for greater demand for professionalism and accountability for performance;
- **Decision makers** at State and other levels - through greater performance of and investment in the sector, workable and adapted strategies and policies having the support of key constituencies.