



KARNATAKA NEERAVARI NIGAM LIMITED

(A Government of Karnataka Enterprise)

**MALAPRABHA PROJECT ZONE, COLLEGE ROAD,
DHARWAD - 580001, KARNATAKA.**

PRE-FEASIBILITY REPORT

ON

**Savanur Integrated Micro Irrigation Project at Kalasur Village,
Savanur Taluka, Haveri District, Karnataka**



**CHIEF ENGINEER,
KARNATAKA NEERAVARI NIGAM LIMITED
MALAPRABHA PROJECT ZONE
DHARWAD, KARNATAKA, INDIA**

Table of Contents

1. Executive Summary	2
2. Introduction of the Project/ Background Information	3
3. Project Description.....	4
4. Site Analysis	5
5. Planning	7
6. Proposed Infrastructure	8
7. Rehabilitation and Resettlement (R&R) Plan	9
8. Project Schedule & Cost Estimation.....	9
9. Analysis of proposal (Final recommendation).....	9

1. Executive Summary

- Savanur Taluk in Haveri district is considered as one of the backward taluks in the State as per Dr. Nanjundappa Committee Report constituted by Govt. of Karnataka to assess regional imbalances in the state.
- Major occupation of the people of this region agriculture. The annual average rainfall is 475mm to 689 mm, which is primarily during the monsoon season (as per Records of IMD station, Dharwad). There are a few tanks which collect rainwater, which are used to irrigate areas in its surroundings; however the major portion of agricultural land other than the achkat (catchment) of tanks depends upon direct rainfall. Farmers grow semidry crops like maize, pulses, sunflower, groundnut, jowar, etc.
- However monsoons are very erratic and unpredictable and in the past few years have been below normal in the region and its surroundings resulting in crop-losses and poor harvests, thus making the livelihood of the people difficult.
- To minimize the dependence of agriculture on monsoons, Savanur Integrated Micro Irrigation Project has been proposed by the Dept. of Water Resources, Govt. of Karnataka to provide irrigation the villages of Savanur Taluk of Haveri District. This will provide stability to agriculture and thus improving the per capita income and standard of living of the people.
- The scheme envisages diversion of 1.5 TMC (42.47 Mcm) of water from the existing Kalasur barrage across Varada River near Kalasur Village, Savanur Taluk and lifting the water to higher lands and providing irrigation facility to 15,500 ha of lands of Savanur Taluk, Haveri district.
- The entire 15,500 ha command area of Savanur lift irrigation system is divided into 4 zones namely Zone-I (4610 ha), Zone-II (4125 ha), Zone-III (3565 ha) and Zone-IV (3200 ha).
- The total water allocated for the proposed project was 1.5 TMC(42.47 Mcm). Out of which 1.35 TMC (38.22Mcm) of water will be utilized for irrigation purpose by adapting drip irrigation with piped conveyance system and remaining 0.15 TMC (4.25Mcm) of water will be used for filling of existing MI tanks (11 Nos.) in and outside the command area to provide drinking water facility and sub soil replenishment.
- The project does not involve submergence and no forest land is required for the project. However the Bankapura Peacock Conservation Reserve is at a distance of 3.6 Km from the command area boundary towards west direction hence the project attracts general condition as mentioned in the Environmental Impact Notification -2006 and its subsequent amendments and falls under 'A category'.
- The location of proposed jack well is at longitude 75°23'34"E and latitude 14°53'02"N near Kalasur Village of Savanur Taluk.
- The proposed irrigation is only in Kharif period and the intensity of irrigation is 100%.
- Command area benefited - 30 villages of Savanur Taluk, Haveri District. (Bavinahalli, Gundur, New Gundur, Neeralgi, Savanur, Jallapura, Teggihalli,
- Kalakoda, Hattimattur, Tallihalli, Yallapura, Hosahalli, Mavuru,

- Chikkabudihal, Kamal Bangadi Timmapura, Hurulikoppa, Tonduru, Challala, Hale Tondur, Mellagatti, Kalkoti, Hire Mugaduru, Mantgani, Mellagatti-old, Kalsuru, Sirbadgi, Mannangi old, Mannangi, Kurubar Mallur, Nandihalli).

2. Introduction of the Project/ Background Information

2.1 Identification of project and project proponent.

Karnataka Neeravari Nigam Limited (KNNL) has been registered as a completely owned company under Government of Karnataka as per the provisions of The Companies Act, 1956 with effect from 9th December 1998. It has its Registered Office at 4th Floor, Coffee Board Building, No.1, Dr. B R Ambedkar Veedhi, Bangalore - 560 001.

2.2. Brief description of nature of the project.

The proposed project is an irrigation project. The scheme involves lifting 1.5 TMC (42.47 Mcm) water from an already existing barrage across Varada River near Kalasur Village, Savanur Taluk by constructing a jack well and pump house. Out of which 1.35 TMC (38.22Mcm) of water will be utilized for irrigation purpose by adapting drip irrigation with piped conveyance system and remaining 0.15 TMC (4.25Mcm) will be used for filling of existing MI tanks (11 Nos.) to provide drinking water facility and sub soil replenishment.

No forest land is required for any part of the project and no additional submergence will be caused due to the project. However, Bankapura Peacock Conservation Reserve is at a distance of 3.6 Km west of the Command Area of the project.

2.3. Need for the project and its importance to the country and or region.

Major economic activity of the region is due to agricultural activities, which are heavily monsoon dependent. However, due to the inconsistent monsoons and erratic rainfall, the overall agricultural production and consequently the per capita income and the overall economy of the region is low. In addition, the area situated in central part of the State, like many other areas is highly drought prone.

Irrigation projects have to a large extent mitigated the problems due to monsoons and droughts in many areas in the region. This proposed project similarly will provide irrigation facilities to the 15,500 Ha in 30 villages of Savanur Taluk, Haveri district in addition to providing drinking water and sub-soil replenishment. Thus improving the agricultural output and increasing the per-capita income of the people of the region while also improving groundwater scenario and clean drinking water to the people of the villages in the taluk.

2.4. Demand-Supply

The total water allocated for the proposed project was 1.5 TMC (42.47 Mcm). Out of which 1.35 TMC (38.22Mcm) of water will be utilized for irrigation purpose by adapting drip irrigation with piped conveyance system and remaining 0.15 TMC (4.25Mcm) of water will be used for filling of existing MI tanks (11 Nos.) in and outside the command area to provide drinking water facility and sub soil replenishment.

2.5. Imports vs. Indigenous production

Not Applicable

2.6. Export possibility

Not Applicable

2.7. Domestic/ Export markets.

Not Applicable

2.8. Employment Generation (Direct and Indirect) due to the project.

Around 500 people (100 Technical and 400 construction labourers) are expected to be employed temporarily for the construction work of diversion weir across Varada River, intake channel, jack well cum pump house, raising main, delivery chambers and distribution network consisting of piped conveyance system with drip irrigation. During operation phase labourers will be appointed operation and maintenance of the jack well.

3. Project Description

3.1. Type of project including interlinked and interdependent project, if any.

Not applicable

3.2. Location (map showing general location, specific location, and project boundary & project site layout) with coordinates.

The project is situated in Savanur Taluk of Haveri District, Karnataka.
The command area of the proposed project is enclosed as **Annexure 1**.

3.3. Details of alternative sites, considered and the basis of selecting the proposed site particularly the environmental considerations gone into should be highlighted.

Not applicable

3.4. Size & magnitude of operation

The scheme envisages diversion of 1.5 TMC of water from the existing Kalasur barrage across Varada River near Kalasur Village of Savanur Taluk and lifting the water to higher lands and providing irrigation facility to 15,500 ha of lands of Savanur Taluk of Haveri district, thereby facilitates 30 villages of Savanur Taluk.

3.5. Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc) should be given.

Enclosed as **Annexure-1** and **Annexure-2**

3.6. Raw material required along with estimated quantity, likely source, marketing area of final products, mode of transport of raw material and finished products.

Not applicable

3.7. Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.

Not applicable

3.8. Availability of water its source, Energy/power requirement and sources should be given.

Water Requirement

It is proposed to lift 1.50 TMC (42.48 Mcm) of water from Varada River for irrigation purpose.

Power Requirement

HP Proposed at Jack well for lifting water from Jack well to MDC is 16,000HP

HP Proposed at MDC's for Distribution / Drip System. (Centrifugal Pumps/ Sub block area proposed) is 7000HP

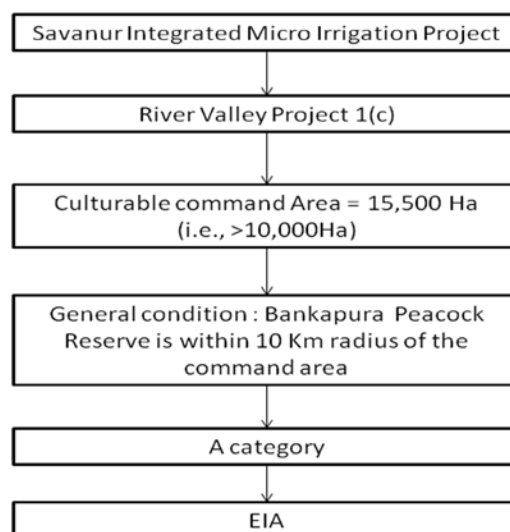
Source- HESCOM (Hubli Electricity Supply Company).

3.9. Quantity of wastes to be generated (liquid and solid) and scheme for their Management/disposal.

Sewage generated from the labour camps will be treated in septic tank and soak pits that will be designed and constructed as per IS 2470 Part-I and Part-II.

Domestic solid wastes proposed to be generated from labour camps will be disposed to nearby Municipal Landfills.

3.10. Schematic representations of the feasibility drawing which give information of EIA purpose



4. Site Analysis

4.1. Connectivity

The project site (Head works) is approachable by road and is at a distance of 22km along NH-4 from Shiggaon, the taluk head quarters. NH-4 is at a distance of 7 Km from the lift point. The lift point near Kalasur village is at the distance of 13 km from Savanur taluk head quarters along the state highway NH-4. Kalasur Railway Station is at 1.5 Km (Northeast) from the lift point. Haveri railway station is at a distance of 11 km (south). Nearest airport is Hubli airport which is at 80 Km (Northwest) from the lift point.

4.2. Land form, land use and land ownership.

The land use in the proposed project area is dry land agriculture, subject to vagaries of monsoon rain with low cropping intensity and low productivity. Basically it is subsistence farming. The common semidry crops that are grown are Jowar, Pluses, Groundnut, Sunflower etc.,.

4.3. Topography (along with map)

Topography is relatively plain area with gentle to mild slopes. Toposheet is attached as **Annexure-3**.

4.4. Existing land use pattern (agriculture, non agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forest, national parks, wild life sanctuary, eco sensitive areas, water bodies (distance from, the HFL of the river)). In case of notified industrial area a copy of the Gazette notification should be given.

The existing land use pattern of the command area is agriculture. Karajgi reserve forest is at a distance of 6.3 Km from the lift point towards southeast direction. Bankapura Peacock Conservation Reserve is at a distance of 3.6 Km away from the command area towards west direction. Varada River is the part of the scheme.

4.5. Existing Infrastructure

The project site (Head works) is approachable by road and is at a distance of 22km along NH-4 from Shiggaon, the taluk head quarters. NH-4 is at a distance of 7 Km from the lift point. Minor roads connected villages within the command area.

4.6. Soil Classification

The soil in the command area is red soil with low water holding capacity, moderately deep fine textured and heavy black cotton soils with high water yielding capacity but with poor internal drainage. All these soils are generally suitable for irrigating the Kharif crops.

4.7. Climatic data from secondary sources

The catchment spreads in two agro climatic zones. The western and eastern part of the catchment falls under hilly zone and Northern Transition zone respectively. The climate of the western part in general is characterized as humid and dry. The year

may be divided into four seasons. The summer is from March to May and is followed by the southwest monsoon season from June to September. October and November constitute the retreating monsoon or post monsoon season. The period from December to February is generally dry with clear bright skies.

4.8. Social Infrastructure available

In the close proximity of the project site, educational, religious and transportation facilities are found. At a distance of 1 km and 3.69 km Kalasur and Karajgi railway stations are found respectively. The nearest highway is NH4 which is 6.5 km away. The habitants have a good transportation facility as there are accessible easily. There are few educational infrastructures like the Ayurvedic Medical College, G H College, Shivabasaveshwar Mahila College and Government Engineering College within 10kms of the project site. Also, Jamiya Masjid Ablur Nandi temple and Purasiddeshwar temple are located within 10kms from the site. Overall it is clearly seen that the social infrastructure in and around the project site is of a good standard.

5. Planning

5.1. Planning concept (type of industries, facilities, transportation, etc.) Town and Country Planning Development authority classification.

Transportation facility at a distance of 1km and 3.69km Kalasur and Karajgi railway stations are found respectively. The nearest highway is NH4 which is 6.5 km away. The habitants have a good transportation facility as there are accessible easily

5.2. Population Projection.

Influx of people will be only during construction phase, only few people will be employed for operation and maintenance of the project.

5.3. Land use planning (breakup along with green belt etc.)

15,500 Ha of agricultural land will come under this scheme.

5.4. Assessment of Infrastructure Demand (Physical & Social).

The proposed project envisages the lifting of 1.5 TMC of water from Varada river and providing irrigation facility to 15,500 Ha dry area which inturn improves the cropping pattern and crop yield.

5.5. Amenities/facilities

The proposed project is a single stage proposal with single lift location on the left bank of Varada River near Kalasur Village of Savanur Taluk. It is proposed to provide irrigation facility to 15500 ha of lands through drip irrigation in Savanur Taluk and providing drinking water facility by filling existing MI Tanks in and

outside the command area, thereby providing irrigation facility to 30 villages of Savanur Taluk.

6. Proposed Infrastructure

6.1. Industrial Area (Processing area)

Not applicable

6.2. Residential Area (non processing area)

Not applicable

6.3. Green Belt

15,500 Ha of agricultural land will come under this scheme.

6.4. Social Infrastructure

There are few educational infrastructures like the Ayurvedic Medical College, G H College, Shivabasaveshwar Mahila College and Government Engineering College within 10kms of the project site. Also, Jamiya Masjid Ablur Nandi temple and Purasiddeshwar temple are located within 10kms from the site. Overall it is clearly seen that the social infrastructure in and around the project site is of a good standard.

6.5. Connectivity Traffic and Transportation Road/Rail/Metro/Water ways etc

The project site (Head works) is approachable by road and is at a distance of 22km along NH-4 from Shiggaon, the taluk head quarters. NH-4 is at a distance of 7 Km from the lift point. The lift point near kalasur village is at the distance of 13 km from savanur taluk head quarters along the state highway NH-4. Kalasur Railway Station is at 1.5 Km (Northeast) from the lift point. Haveri railway station is at a distance of 11 km (south). Nearest airport is Hubli airport which is at 80 Km (Northwest) from the lift point.

6.6. Drinking water management (Source & Supply of water)

It is proposed to utilize 0.091 TMC of water for domestic water supply to villages by filling up of following existing 11 Minor Irrigation Tanks of Savanur & Kundgol Taluks.

6.7. Sewerage System

Sewage generated from the labour camps is proposed to be treated in Septic Tank and Soak Pits designed and constructed as per IS 2470 Part-I & Part-II

6.8. Industrial waste management

Not Applicable

6.9. Solid waste management

Domestic solid waste will be disposed to nearby municipal landfills.

6.10. Power requirement & Supply/Source

HP Proposed at Jack well for lifting water from Jack well to MDC is 10400HP

HP Proposed at MDC's for Distribution / Drip System. (Centrifugal Pumps/ Sub block area proposed) is 7000HP

Source- HESCOM (Hubli Electric Supply Company)

7. Rehabilitation and Resettlement (R&R) Plan

7.1. Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees, and landless labourers (a brief outline to be given).

The proposed project does not involve displacement of the families/houses for the project activities. The total land required for the project is 80.92 Acres which is dry in nature and the same shall be acquired as per Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act (RTFC&LARR Act), 2013.

8. Project Schedule & Cost Estimation

8.1. Project Schedule

The total developmental period of the entire proposed project will be about 36 months.

8.2. Cost Estimates

The total cost estimated for the proposed project is 690 Crores which is inclusive of the following.

9. Analysis of proposal (Final recommendation)

9.1. Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area

BC Ratio calculations for the project is as given in **Annexure 4**.