

Government Intervention for Minor Irrigation Development in Karnataka: A Study on the Initiatives of Karnataka Minorities Development Corporation Ltd.

DR. NIZAMUDDIN

Associate Professor of Economics, Government First Grade College, Chickaballapura, Karnataka State

Abstract- Agriculture remains the backbone of Karnataka's economy, despite its growing diversification into industrial and service sectors. A significant share of the state's workforce depends on agriculture, yet the sector continues to face structural constraints such as rainfall dependency, fragmented landholdings, inadequate irrigation infrastructure, and limited access to modern technology. In this context, minor irrigation plays a crucial role in enhancing agricultural productivity, income stability, and rural development, particularly in drought-prone and rain-fed regions. The present study examines government intervention in minor irrigation development in Karnataka with a special focus on the initiatives implemented by the Karnataka Minorities Development Corporation Ltd. (KMDC) established in 1986 under the Government of Karnataka. KMDC Ltd aims to improve the socio-economic conditions of minority communities through various welfare programmes, including the flagship Ganga Kalyana Scheme, which provides bore wells, lift irrigation facilities, and energisation support to small and marginal minority farmers. The study is descriptive and analytical in nature and is based entirely on secondary data collected from government reports, KMDC publications, budget documents, and relevant literature. The findings indicate that KMDC interventions have significantly improved irrigation access, enhanced cropping intensity, increased agricultural productivity, and contributed to higher farm incomes among beneficiary farmers. The schemes have also promoted social inclusion by targeting minority communities. However, the study identifies key challenges such as groundwater depletion, maintenance issues of irrigation infrastructure, financial constraints, and administrative delays, which affect the long-term sustainability of these initiatives. The study concludes that while KMDC has played a significant role in strengthening minor irrigation and inclusive rural development, future policy efforts must emphasize sustainable water management, adoption of micro-irrigation technologies, and community-based maintenance systems to ensure long-term effectiveness.

Keywords: minor irrigation, kmdc, ganga kalyana scheme, agricultural development, karnataka, minority farmers, groundwater sustainability

I. INTRODUCTION

The economy of Karnataka State is predominantly agrarian. The state's Gross State Domestic Product (GSDP) is USD 292.09 Billion in 2023-24, driven strongly by agriculture sector among others. Over 58.59% of Karnataka's land is used for agriculture and farming facilities. Agriculture employs more than 70% of the state's work force. Yet agriculture in Karnataka is plagued by many problems like low agricultural productivity, over dependence on rains, lack of use of improved technology, preponderance of small and marginal farmers, defective storage and marketing facilities, inadequate transport facilities, rampant rural unemployment and underemployment. There is an urgent need to develop agricultural sector on a priority basis.

Irrigation is one of the strategic inputs for agricultural transformation which plays very important role in its development. In Indian planning, irrigation projects are classified as major, medium and minor projects. The projects irrigating less than 2,000 hectares of land are considered as minor irrigation works (Government of India Report). Minor irrigation projects are designed to provide water to small and marginal farmers through tanks, check dams, bore wells, lift irrigation schemes, and groundwater recharge structures. The main advantages of minor irrigation works are that they require small investment, can be completed within a short period and their effect on agricultural production will be felt immediately. If quick returns are expected, minor irrigation works are very suitable for farmers.

The Government of Karnataka has played a significant role in the development of minor irrigation systems to support agriculture, particularly in drought-prone and rain-fed regions. In this backdrop, to mitigate economic hardships and enhance agricultural production and farm income among small and marginal farmers belonging to religious minority communities such as Muslims, Christians, Jains, Buddhists, and Parsis, Karnataka Minorities Development Corporation Ltd., established by the Government of Karnataka in 1986, recognized the need to provide institutional support for minor irrigation facilities to the lands of minority small and marginal farmers. This paper attempts to study government intervention in minor irrigation development in the state, with a particular focus on the initiatives undertaken by Karnataka Minorities Development Corporation Ltd.

II. REVIEW OF LITERATURE

Good number of studies have been done to highlight the strategic role of irrigation, more specifically, major and medium irrigation in bringing about striking changes in the production, productivity, cropping pattern, farm income etc. Ingle, P.M. et al. (2015) studied on Performance analysis of a Minor Irrigation theme. Rabinjyoti Khataniar and Shahnaaz Benazir (2013) conducted a study on Impact of Minor Irrigation Project on Farm Productivity- A Study in Flood Affected Areas of Assam. Chikkaranga Swamy (2011) conducted a study on Impact of Jala Samvardhane Vojana Sangha on rural Communities: A study of Karnataka State. However, limited research has specifically examined the contribution of KMDC to minor irrigation development among minority farmers, thereby creating a gap that this study seeks to address.

III. STATEMENT OF THE PROBLEM

Religious minority farmers in Karnataka often face constraints such as limited landholdings, inadequate irrigation facilities, and restricted access to institutional support. Even though KMDC has implemented irrigation-leaning schemes for some decades, there is a need to appraise their helpfulness

in refining agricultural productivity and rural livelihoods. This paper attempts to study government intervention in minor irrigation development in the state, with a particular focus on the initiatives undertaken by KMDC Ltd.

IV. OBJECTIVES OF THE STUDY

1. To examine the role of government intervention in minor irrigation development in Karnataka.
2. To analyze the minor irrigation initiatives implemented by KMDC.
3. To provide suggestions for improving the effectiveness and sustainability of irrigation interventions.

V. RESEARCH METHODOLOGY:

The study is descriptive and analytical in nature based exclusively on secondary data collected from Karnataka Minorities Development Corporation reports, Government publications and policy documents, Karnataka State Budget documents, Journal articles and research studies, reports from irrigation and agricultural departments, Official websites and public records.

Analytical Framework

The collected data were analyzed using qualitative and descriptive methods to apprehend the contribution of KMDC's irrigation initiatives to agricultural development.

Government Intervention in Minor Irrigation Development

The Government of Karnataka has been rendering a momentous role in the advance of minor irrigation systems to upkeep agriculture, particularly in drought-prone and rain-fed regions. Minor irrigation projects are planned to provide water to small and marginal farmers through tanks, check dams, bore wells drilling assistance, lift irrigation schemes Construction and rehabilitation of tanks and so on.

Irrigation is an important source of raising productivity in agricultural sector. Expansion of both the ground water and surface water resources has helped to increase the cultivated area under irrigation

in the state over time. The net irrigated area has increased considerably from 13.62 lakh hectares in 1980-81 to 26.43 lakh hectares in 2000-01 and to 35.56 lakh hectares in 2013-14. Similarly gross irrigated area which was 16.76 lakh hectares in 1980-81, has increased to 41.12 lakh hectares in 2013-14. Likewise, the share of gross irrigated area in the total cropped area has increased from 16% in 1980-81 to 42.5% in 2022-23, and further to 43.4% in 2023-24 (provisional).

The prominent minor irrigation projects introduced by government of Karnataka are as given below.

Murgod Lift Irrigation Scheme

This major project envisages lifting of water from fifty five kilometer of Markandeya neck of the woods canal (near Malagali village) to irrigate 1939 HA of space in eight villages. .

Chachadi Lift Irrigation Scheme

This scheme envisages lifting of water from thirty fourth km of Markandeya vicinity canal to irrigate 2718 angular distance of space.

Hiranyakeshi Lift Irrigation Scheme

This scheme is projected to raise eight TMC of water from Hiranyakeshi watercourse to feed GRBC throughout Khariff season. This theme has been projected to satisfy the possible shortage of water because of over utilization underneath GLBC.

Bellary Nala Project

The Bellary nala irrigation project envisages to irrigate 8200 hour angle of land in Belgaum, Gokak, Saudatti and Bailahongal taluks of Belgaum districts by constructing a dam across Bellary nala that could be a main tributary to Markendaya watercourse

Malikwad Lift Irrigation Scheme

This theme contains of rehabilitation work as well as filling of tanks of Yadanwadi, Vadagol and Bainakwadi villages of chikodi Taluka and additionally as well as rejuvenation of elevate irrigation scheme of Malikwad village.

Filling up of Kadapur Tank

The 11th water irrigation theme is showed to fill Kadapur Tank which is near to Kadapur village, of the taluk of Chikkodi by lifting water resource from avatar watercourse.

Filling up of 22 Tanks from Hiranyakeshi River (18 Tanks of Huk-Keri Taluka and 4 Tanks of Chikodi Taluka)

Filling from twenty two Tanks from Hiranyakeshi watercourse (18 Tanks of Huk-Keri Taluka and four Tanks of Chikodi Taluka)

The scheme envisages upwording of water from Hiranyakeshi watercourse to complete twenty two tanks in the taluks of Hukkeri

Tubachi – Babaleshwar Lift Irrigation Scheme

The elevate irrigation theme is projected to irrigate fifty two,700 angular distance areas of Vijayapur, Athani and Jamakhandi of Vijayapura, Belagavi and Bagalkot District by utilising the half-dozen.30 TMC of water from avatar watercourse throughout Kharif season.

Basaveshwar (Kempwad) Lift Irrigation Scheme

The elevate irrigation theme is projected to irrigate 27462 angular distance of twenty-two draught affected villages returning below Athani Taluka Belgaum District, utilizing four.00 TMC of water from backwaters of Hipparagi Barrage throughout season.

Venkateshwar Lift Irrigation Scheme

The elevate irrigation theme is projected to irrigate 7200Ha of space in four villages of Mudhol and half-dozen villages of Jamakhandi taluk. .

Javalahalla Lift Irrigation Scheme

Under this project it's projected to irrigate suffering atchkut of 1917Ha of Shirasangi branch of Naragund Branch Canal of Malaprabha locality canal by lifting water from Javalahalla set close to Kittur Village, Ramdurg Taluk, Belagavi District..

Bennihalla Lift Irrigation Scheme

It is projected to irrigate the suffering atchkut of three,868 angular distance underneath Nargund

branch canal by constructing series of weirs at Banahatti, Kuralageri, Surkod, Khanapur and Radder Naganur.

Kolachi Lift Irrigation Scheme

It is planned to irrigate the suffering atchkat of 1538Ha beneath Kolachi vicinity canal by lifting water from Bennehalla in Rona Taluk of Gadag District.

Konnur Lift Irrigation Scheme

It is planned to irrigate the suffering atchkat of 1578Ha beneath Naragund Branch canal by lifting zero.39 TMC of water from Malaprabha stream in Nargund Taluk of Gadag District..

Shiggaon Lift Irrigation Scheme

The theme is planned to irrigate 9900Ha by mechanical device and 3600Ha by drip irrigation and tank filling and supply beverage facility to Shiggaon, Savanur and Hanagal taluks of Haveri district by utilizing 1.5 TMC of water.

Savanur Lift Irrigation Scheme

The elevate irrigation theme is planned to irrigate one5500 hour angle areas in thirty villages of Savanur taluk and conjointly filling of eleven tanks by lifting the 1.5 TMC of water from Varada stream close to Kalasuru village of Savanur Taluk.

Tunga Lift Irrigation Scheme

It is planned to elevate water from arthropod genus stream close to Shivamogga to supply water to Haihole, Bare-halla and Goudanakere tanks and to fill twenty nine tanks in downstream of Goudanakere.

Basapura Lift Irrigation Scheme

It is planned to elevate zero.60 TMC of water from stream Varada close to Basapura village in two stages to irrigate 2000 hour angle of areas of thirteen villages of Hangal Taluk, Haveri District.

Itagi-Sasalwad Lift Irrigation Scheme

It is planned to elevate water from Tungabhadra stream close to Itagi village, Shirahatti Taluka, Gadag District to irrigate 1983Ha of Khariff and semi dry crops of Shirahatti, Mundargi and Haver Taluk.

Guddadamallapura Lift Irrigation Scheme

It is planned to elevate one.0 TMC of water from Varada stream close to Guddada Mallapur Village, Byadagi taluka to irrigate 5261 hour angle of areas of Byadagi taluk of Haveri district.

Ubrani-Amruthapura Lift Irrigation Scheme

It is planned to fill of fifty seven Tanks of Tarikere Taluk and eighty nine Tanks Channagiri Taluk. This project includes of two stages and works beneath each stages completed and project is commissioned.

Sanyasikoppa Lift Irrigation Scheme

It is planned to construct anicut across Kumudavathi stream close to Sanyasikoppa village in Shikarip-ura Taluk, Shimoga District and elevate water to irrigate 1791 hectares.

Tiluvalli Lift Irrigation Scheme

It is planned to elevate zero.26 TMC of water from Varada stream to irrigate 1011 hour angle areas of Hanagal taluk of Haveri District and rejuvenation of Thiluvalli Doddakere, Siddanahonda, Yethinahalli, Chikkatti and Hiriya tank and canals.

Kachavi Lift Irrigation Project

Kachavi LIS is planned close to village Kachavi in Soraba Taluk of Shimoga District by Lifting zero.15 TMC of Water from Varada stream to enhance insufficiency of water in eleven villages by feeding twenty one tanks in these villages.

Huchcharayana Kere

Huchcharayanakere tank placed at Shikaripur Taluka, Shivamogga District. Works are completed long back. Construction of Pushakarni, farming and change of state works are completed. Development and improvement works are being observed.

Sheelavanthana Koppa Kere

Sheelavanthana koppa tank is made across Jambur water stream close to Ambarkoppa (Sheelavantanakoppa) village, Shikaripur Taluka, Shivamogga District.

Madag-Masur Tank Project

Madag-Masur tank is made across Kumudvathi stream close to Masur village, Hirekerur Taluka, Haveri District. The project is completed long back and presently development and improvement works are being progressed.

Dharma Project

Dharma Dam is built across Dharma watercourse close to Yemgalli village, Mundagod Taluka, Uttarakannada District. The project is completed and outlet potential of 7692 hour angle has been created. Presently modernization works are below progress.

Hodirayanahalla Diversion Scheme

Jambadahalla Reservoir is found close to Duglapura village, Tarikere Taluk of Chickmagalur district. It's projected to irrigate the suffering 1296 hour angle of space by amusive surplus water from Hodirayanahalla.

Bheemasamudra Tank

Bheemasamudra tank is built five hundred years ago to irrigate 1235Ha. areas of Bheemasamudra village, Chitradurga Taluk and district. so as to extend the storage capability of this tank it's projected to construct dam across Bettadanagenahalli and Jogerahalla and thru feeder canal it's projected to fill the tank.

D.B. Kere Pick-Up Project

D.B. Kere pick-up project is found within the atchkut of Bhadra project. It's constricted across Haridra watercourse and Shyagalli stream close to Devarabelakere village of Harihara Taluka of Davanagere District.

Davanagere 22 Tanks (Rajanahalli Lift Irrigation Scheme)

It is projected to raise water from Tungabhadra watercourse close to Rajanahalli village, Harihara Taluka, Davanagere District to fill twenty two tanks settled in Davanagere, Jagaluru and Harapanahalli Taluka.

Bennithora Project

Bennithora dam is built across Bennithora watercourse close to Herura Village, Chittapur

Taluka, Kalaburgi. it's projected to irrigate 20234 hour angle space of Kalaburgi District..

Amarja Project

Dam is built across the watercourse Amarja, a tributary to watercourse Bhima in Krishna Basin, close to San-golgi village in Aland Taluk of Kalaburgi District to store one.544 TMC of water.

.Soudagar Tank Project

Soudagar tank is built across Soudaga Nala close to Shamnapur village of Yadgir District. Out-let potential of 1417Ha in Yadgir district is made.

.Singatalur Lift Irrigation Scheme

It is projected to irrigate 107380 HA (19,587 HA of Flow and eighty seven,793 HA of Drip) of Huvinahadagali, Koppal, Yalaburga, Gadag, Mundargi talukas of Bellary, Koppal and Gadag Districts.

Katharaki Lift Irrigation Scheme

It is set close to Katarki village of Manvi Taluka of Raichur District. Underneath this project it's proposed to irrigate of Tungabhadra project..

Bailmarchad Lift Irrigation Scheme

It is set in Bailamarchad village of Manvi Taluka. Underneath this project it's projected to irrigate of Tungabhadra project..

Karur Lift Irrigation Scheme

It is projected to elevate water from Doddahalla stream close to Karur village. Underneath this project it's proposed to irrigate suffering atchkut of Tungabhadra project..

Ola Bellary Lift Irrigation Scheme

Under this project it's projected to irrigate 2542 HA of suffering atchkut of Tungabhadra project set close to Sindhanur taluk of Raichur District. .

Alvandi Betageri Lift Irrigation Scheme

Under this project, it's projected to supply irrigation facility to 990 acres of land within the drought prone area units of Koppal taluk and therefore the works are underneath progress.

VI. INITIATIVES OF KARNATAKA MINORITIES DEVELOPMENT CORPORATION LTD FOR MINOR IRRIGATION DEVELOPMENT

KMDC Ltd functions under the Minority Welfare Department of the Government of Karnataka aiming to improve the socio-economic conditions of minority communities. The corporation implements several welfare programs, including educational loans, self-employment schemes, housing support, and agricultural development. Initiatives of KMDC Ltd for Minor irrigation development are as below.

Ganga Kalyana Yojane:

Under this scheme the corporation offers two types of minor irrigation facilities, which are mentioned below.

- a. Community Irrigation: It is a lift irrigation scheme utilizing the perennial source of water (rivers) and lifting water through pipelines. Wherever perennial water sources are not available, Bore wells are drilled underground, Submersible pump set well be installed and energisation for the bore well will be done by the corporation. To avail benefit in this sub scheme the farmers should be small and marginal and those who have totally 8 acres of land comprising 3 farmers will get 2 Bore wells and 15 acres of land comprising of 5 farmers will get 3 Bore wells, and each farmer should have 2 to 3 acres of land. This is fully a subsidy scheme.
- b. Individual bore well: Under this minor irrigation scheme individual bore well facility will be provided On the basis of selection by the Competent Authority, for the farmers holding 2 to

5 acres of land, one bore well will be drilled and pump set will be supplied. The total expenditure is Rs.1, 00,000 (Grant of Rs. 86,000 and Loan of Rs. 14,000), this includes Energisation charges. The KMDC Ltd would fix the physical and financial target based on allocation in the state budget and minority population. The regional office KMDC Ltd of the concerned district invites the application through newspapers. The received application will be scrutinized and District manager will place the proposal before the Taluq Committee headed by MLA of the constituency. The committee will select the beneficiary and forward the proceedings to the head office.

Conditions:

1. The farmers should belong to the religious minority communities as defined in the Government order.
2. They should be permanent resident of Karnataka State.
3. They should be small and marginal farmers.
4. Each beneficiary should have 1 acre 20 gunte (1 acre 50 cents) of acre to 5 acres of dry land, in districts like Kodagu, Dakshina Kannada, Udupi, Uttara Kannada, Chikkamagaluru, Shimoga and Hassan, the minimum land should be 1 acre as the availability of land is very less.
5. Family income from all sources should not exceed Rs.6.00 lakh
6. They should be purely dependent on agriculture and should not have any other type of irrigational facility.
7. Applicant's age should be at least 18 years. Maximum age limit of 55 years for applicants has been cancelled

Community wise beneficiaries of Ganga Kalyana Scheme are given in Table 1.

Table 1

Karnataka Minorities Development Corporation Ltd							
Community wise beneficiaries of the Ganga Kalyana Scheme							
Year	Muslims	Christians	Jains	Sikh	Buddhists	Parsis	Total
2023-24	611	52	73	0	0	0	736
2024-25	217	26	13	0	0	0	256

Source: <https://kmdc.karnataka.gov.in/26/reports/en>

Budget for welfare of religious minorities in Karnataka is given in Table 2

Table 2

Sl. No.	Years	Budget Amount (Rs. in crore)
1	2010-11	269.26
2	2011-12	391.57
3	2012-13	444.81
4	2013-14	769.39
5	2014-15	911.67
6	2015-16	998.39
7	2016-17	1527.37
8	2017-18	2750.00

Source : Office of the Directorate of Minorities, Bangalore

VII. IMPACT OF KMDC INITIATIVES ON MINOR IRRIGATION DEVELOPMENT

1 Increased Irrigation Coverage

The scheme has stretched irrigation access among minority farmers who formerly rest entirely on rainfall. The irrigation facilities has enabled farming throughout the year.

2 Enhanced Agricultural Productivity

Reliable irrigation has facilitated the cultivation of better crops and improved crop yields. Farmers have been able to adopt modern agricultural practices due to assured water availability.

3 Income Generation

Increased productivity is resulted in higher farm incomes. The scheme has contributed to poverty reduction among beneficiary households.

4 Employment Generation.

The expansion of irrigated agriculture has generated additional employment opportunities in rural areas, particularly during agricultural seasons.

5 Social Inclusion

The targeted nature of KMDC interventions has improved access to developmental benefits among minority communities, thereby promoting inclusive growth.

VIII. CHALLENGES IN IMPLEMENTATION

Despite notable achievements, several challenges continue to affect the effectiveness of minor irrigation programmes:

1 Groundwater Depletion

Excessive dependence on bore well irrigation has contributed to groundwater stress in several regions of Karnataka. Recent state initiatives have highlighted concerns regarding groundwater sustainability.

2 Maintenance Issues

Maintenance of irrigation infrastructure remains a challenge after project completion, particularly in remote areas.

3 Financial Constraints

Budgetary limitations occasionally affect the timely implementation of projects and expansion of beneficiary coverage.

4 Technical Difficulties

Some bore wells fail due to inadequate groundwater availability, resulting in reduced effectiveness of investments.

5 Administrative Delays

Procedural and administrative bottlenecks may delay project approval and implementation.

IX. FINDINGS OF THE STUDY

1. Government intervention has played a significant role in expanding minor irrigation facilities in Karnataka.
2. KMDC has emerged as an important institution for promoting irrigation development among minority farmers.
3. The Ganga Kalyana Scheme has substantially improved irrigation access through bore wells.
4. Irrigation support has enhanced agricultural productivity and rural incomes.
5. Groundwater sustainability remains a major concern for the long-term success of irrigation programmes.
6. Better monitoring and maintenance mechanisms are required to ensure project sustainability.

X. SUGGESTIONS

1. Promote micro-irrigation technologies such as drip and sprinkler systems.
2. Strengthen groundwater recharge programmes to ensure sustainable water use.
3. Increase budgetary allocations for irrigation infrastructure development.
4. Enhance technical monitoring of bore well projects.
5. Encourage community participation in the maintenance of irrigation assets.
6. Integrate irrigation schemes with watershed development programmes.
7. Conduct regular impact assessments of beneficiary outcomes.

XI. CONCLUSION

Minor irrigation development is essential for achieving sustainable agricultural growth in Karnataka. Through schemes such as Ganga Kalyana, the KMDC Ltd has significant contributions toward improving irrigation access among minority farmers.

These interventions have enhanced agricultural productivity, increased rural incomes, and promoted inclusive development. However, challenges related to groundwater depletion, maintenance, and implementation efficiency require continuous policy attention. Future efforts should focus on sustainable water resource management, technological innovation, and community participation to maximize the long-term benefits of irrigation development programmes.

REFERENCES

- [1] Government of Karnataka. Karnataka Minorities Development Corporation Limited. Annual Reports and Scheme Guidelines.
- [2] Karnataka Minorities Development Corporation. Ganga Kalyana Scheme Guidelines.
- [3] Narayanamoorthy, A. (2017). Economics of Irrigation Development in India. New Delhi: Academic Foundation.
- [4] Shah, T. (2014). Groundwater Governance and Irrigation Development in India. Oxford University Press.
- [5] Sarada, R.V. and Narender, I. 1990. Rural development through cooperative societies, a case study of Mahatma Gandhi lift irrigation cooperative. Society, Giddipalli, Nalagonda district. Indian Journal of Agricultural Economics, 45 : 236-237.
- [6] Ingle, P.M., Shinde, S.E., Mane, M.S., Thokal, R.T. and B.L. Ayare. 2015. Performance evaluation of a minor irrigation schemes. Research Journal of Recent Sciences, Vol. 4, pp. 19-24.
- [7] Govindasami, R. and Balasubramanian. 1990. Tank irrigation in India: problems and prospects. Water Resource Development, 6(3) : 211
- [8] <https://minorirrigation.karnataka.gov.in/en>
- [9] <https://kmdc.karnataka.gov.in/en>