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REGIONAL DISPARITIES OF GROUND WATER IRRIGATION IN MANDYA DISTRICT:A GEOGRAPHICAL ANALYSIS

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ABSTRACT

The spatial pattern of irrigation is however, uneven and has been characterized by the changes over time. The success ofagriculture is completely dependent on the monsoon. Due to vagaries of monsoon rainfall, even in the rainy season, particularly,when there is long gap in the chain of

rainy days assured water supply is one of the conditions, which is very essential for cropgrowth. In short, in the study region the success of crop production is by and large associated with hydrological conditions.Today's trend is to consider irrigation as vital input in maximizing the production. The concept of protective irrigation haschanged region. So in the present research paper try to understand the ground water sources of irrigation in Mandya district.

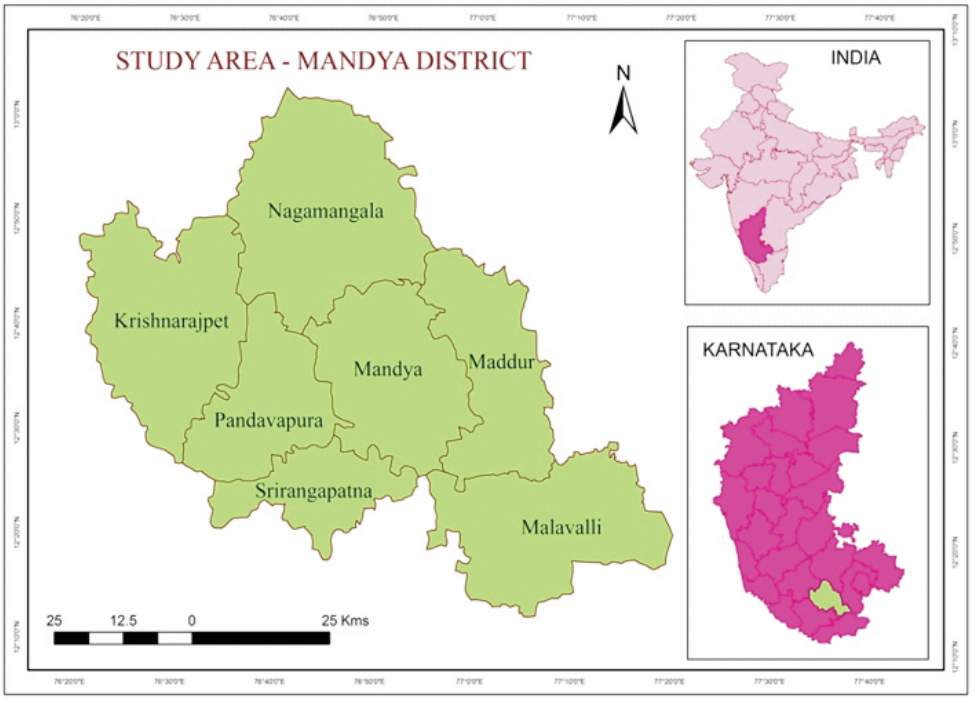
KEYWORDS :*regional imbalances, well irrigation, tube-well irrigation, spatial pattern.*

INTRODUCTION:

Water is one of the strategic inputs for the agricultural transformation. The predominant source of water is rainfall. But it is erraticand unevenly distributed over time and space. These temporal and spatial variations in the occurrence of rainfall vary often resultin drought situations. In view of this, the need for the development of water resource, in the country was well recognized moreparticularly, after the launching of planning process. Irrigation assumes a key role in the strategy for agricultural transformation indevelopmental planning in Indian economy.

STUDY AREA

Mandya district lies between 76° 19' and 77° 20' East Longitude and 12° 13' and 13° 04' North Latitude. The district receives an average annual rainfall of 700 mm. The climate of the district comprises of moderate summers (Max 35°C) and moderate winters (Min 20°C). Mandya district comprises of 7 taluks. The total geographical area of the district is 4, 98,244 Ha, out of which 2,53,067 (50.79%) Ha forms the sown area. More than half of the total land area in the district is put to agricultural use.Total irrigated area is 1,16,901 Ha out of which around 88,000 (75.27%) ha is being irrigated by K.R.Sagar and around 16,000 Ha by Hemavathi reservoir. The rest of the land is irrigated by other sources like tanks, wells and bore wells. With a total population of 1805769, around 5 lakh people are employed in the Agriculture Sector. Mandya District is an agriculturally predominant district in Karnataka state. The farmers in the region adopt improved farm mechanization due to which transformation is taken place in cropping pattern, composition of crops, better grown yield level, ultimately leading to better economic conditions of the people.



OBJECTIVES

The present study was been conducted for:

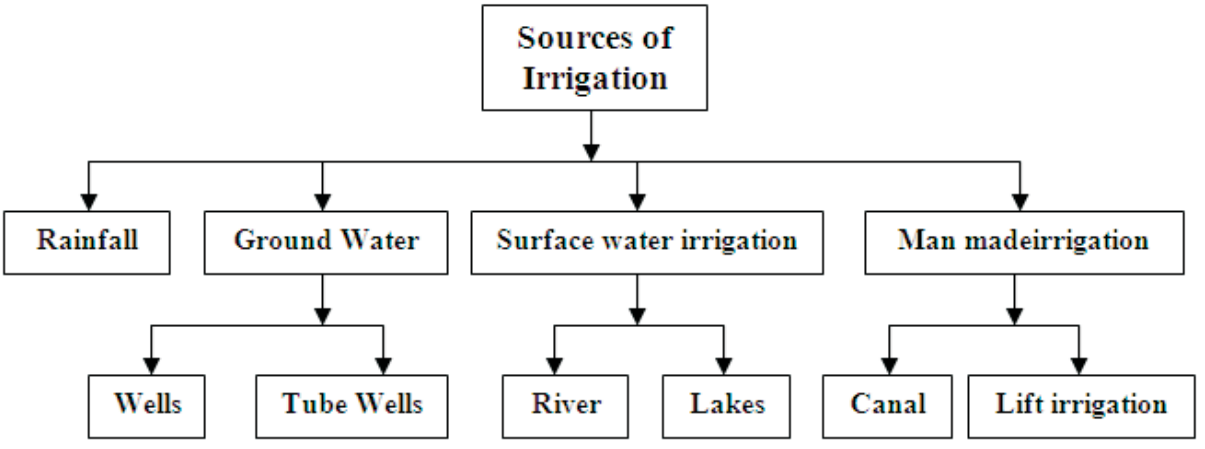
1. To understand spatial pattern of well irrigation in study region.
2. To study tube-well irrigation variation in study region.
3. To assess the level of ground water irrigation in study region.

DATA BASE AND METHODOLOGY

For the present investigation secondary data are used which is collected from Mandya district at a glancein 2014-15 and District Irrigation Department. The data are tabularized and analyzed by using simple statistical equation. The analysisrepresented by cartographic and cloropheth techniques.

RESULTS AND DISCUSSION

There are regional imbalances in irrigation development in Mandya district. They are natural as well as created imbalance. Thenatural imbalances are caused due to the relative advantages and disadvantages of regions with respect to irrigation sources.These natural differences in regions can described as regional disparities.



WELL IRRIGATION:

The main source of irrigation in the districts are; Lake, river,cannel, tank, tube wells and wells. Well irrigation is a traditional source of irrigationto man, it is as old as agriculture. The number of wells hasalso gone up sharply due to several favorable factors, includingeasy availability of loans from the government and financialinstitutions, subsidies on lift machines, mostly cheap powersupply and easy to operate, because the cost constructionof wells is low. The distribution of wells is different according to thetaluks. This may be attributed either to geologicalquality of the land, that is quality of underground water orabsence of substitute means of irrigation.

1.High Well Irrigated Area: - Mandyaand K.R. Pettaluks are the two highly irrigated by the wells. In Mandyataluk,23.5per cent of the cultivated area is irrigated by the wells. A total of 2024 wells are available. In K.R Pettaluk,22.4per cent area is irrigated by the 1145wells (table 1 & map 1).

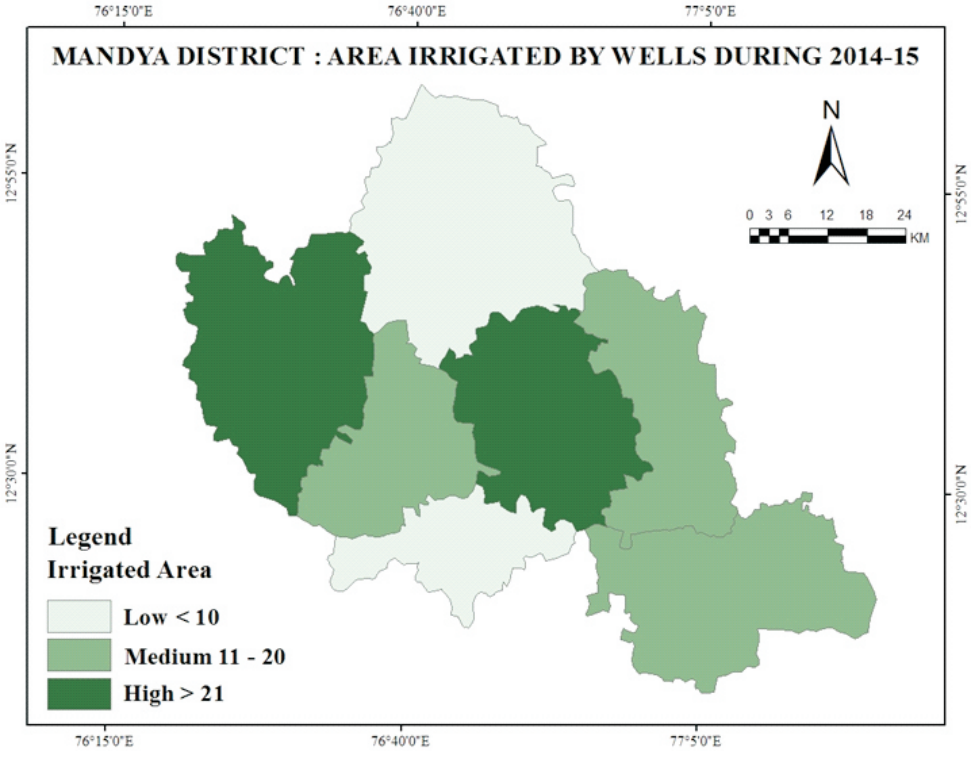
Table 1. Mandya District: AreaIrrigated by Wells during 2014-15

Area in Hectares

S.N	Taluk	Numbers	Area Irrigated by Wells	Percent
1	K.R. Pet	1145	2138	22.4
2	Maddur	1910	1200	12.6
3	Malavalli	2006	1251	13.1
4	Mandya	2024	2234	23.5
5	Nagamangala	2590	450	4.7
6	Pandavapura	1478	1818	19.1
7	Srirangapatna	697	434	4.6
Total		**11850**	**9525**	**100.0**

Source: Mandya District at a Glance - 2014-15

Map 1Mandya District: AreaIrrigated by Wells during 2014-15



2.Medium well Irrigated Area: Most of the taluks are the medium, irrigated land by wells. Pandavapura (19.1%), Malavalli (13.1%) andMaddur (12.6%) taluks are the medium well irrigated region (table 1 & map 1).

3.Low Well Irrigated Area: -Nagamangala (4.7%) and Srirangapatna (4.6%) taluks are the low irrigated land(table 1 & map 1).

DISTRIBUTION OF TUBE WELL IRRIGATION:

Tube wells are the most important source of water in Mandya district. Tube wells are the type of irrigationmethod similar to well irrigation. The distributionof Tube wells is differs according to the taluks. The tube wells are classify in the districtas fallows.

Table 2. Mandya District: Area Irrigated by Tube Wells during 2014-15

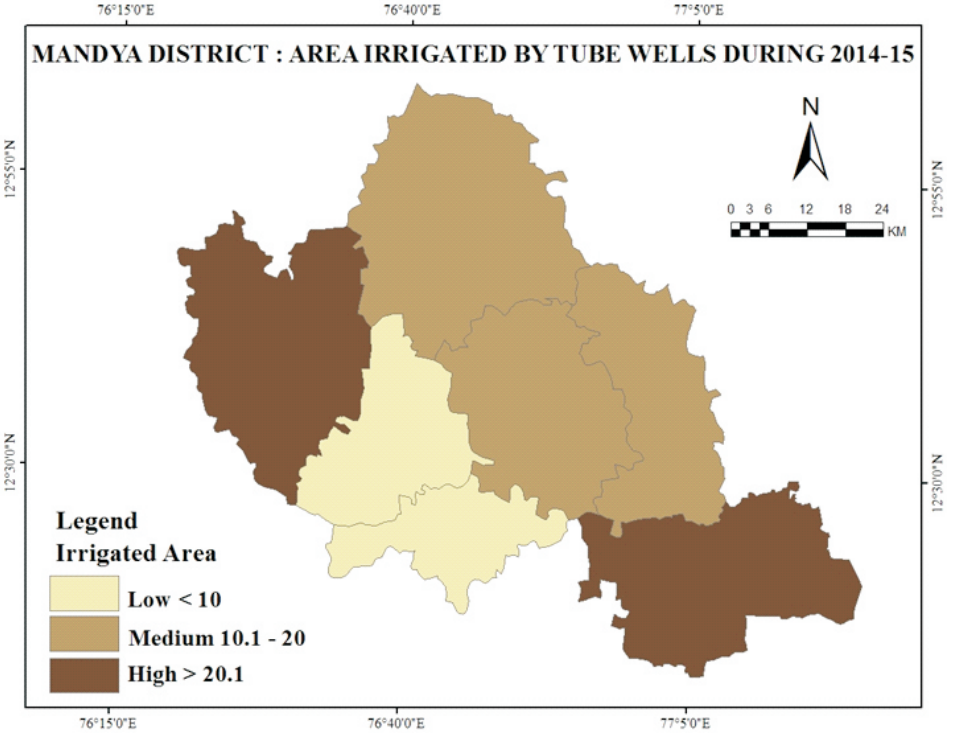
Area in Hectares

S.N	Taluk	Numbers	Area Irrigated by Tube Wells	Percent
1	K.R. Pet	310	4178	22.4
2	Maddur	142	2740	14.7
3	Malavalli	3591	4150	22.2
4	Mandya	1290	3220	17.2
5	Nagamangala	355	1970	10.6
6	Pandavapura	45	1510	8.1
7	Srirangapatna	800	904	4.8
Total		**6533**	**18672**	**100.0**

Source: Mandya District at a Glance - 2014-15

1.High Tube WellIrrigated Area: -K.R. Pet (22.4%) and Malavalli (22.2%) taluks are the highest irrigated regions by the tubewells (Table 2 & map 2). A total of 3901tube wells are available in these taluks.
2.MediumTube Well Irrigated Area: -Mandya, Maddur and Nagamangalataluks are include in this category with a total of 1290, 142 and 355wells respectively.
3.Low Tube Well Irrigated Area: -Pandavapura and Srirangapatna taluks are involved in this category with 45 to 800 tubewells respectively in these taluks.

Map 2 Mandya District: Area Irrigated by Tube Wells during 2014-15



CONCLUSION

The spatial pattern of irrigation is however, uneven and hasbeen characterized by the changes over time. Among theground water irrigation well and tube well is major sourceof irrigation. The well irrigation area is more in Mandya and K.R. Pettaluks, but it is low in Nagamangala and Srirangapatna taluks. Otherwise moderate irrigation area is observed. Thetube-well irrigation is scattered all over district. The highestnumber of tube-wells is found in K.R. Pet and Malavalli taluks. Low number of tube-well is observedin Pandavapura and Srirangapatna taluks.

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