



INTENSITY OF IRRIGATION IN BEED DISTRICT: A GEOGRAPHICAL REVIEW

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Abstract:

Irrigation facilities are for more important as decisive factor in crop regionalization than any other determinants. The rainfall pattern and its spatial distribution is the single most important factor for the development of irrigation facilities. The sources of irrigation in Beed district are mainly tank, canals, wells and tube well etc. Due to heterogeneous landscape, the facilities of irrigation are very restricted and limited in the most part of the district. The present paper analysis the average tahsilwise intensity of irrigation in Beed district for investigating spatial pattern of irrigation two indices chose, first intensity and second is ranking of sources in every tahsil. Changes in place of first, second third and fourth made of irrigation sources. The intensity of irrigation is calculated as the average gross irrigated area as the percentage of average gross cropped area on the tahsil level.

KEY WORDS:

Intensity, Mode of irrigation, Spatial, Heterogeneous, Feminine.

INTRODUCTION:

Water is an important pre-requisite for agricultural development. An assured water supply spells prosperity, creates employment potential, increases income and enhances capital formation. The need for regulated supplies of water and manure at regular intervals and in requisite doses was long realized for the increase in the productivity of land. Intact, the production of crop requires soil, water, seed, labour implements, proper planning and management. Irrigation has proved beneficial to the agricultural development of a country. In fact irrigation forms the life line for sustained successful agriculture. It alleviated suffering, preserved life, averts famine and advances the material prosperity of the country. In a country like India, Its importance is all the more great. As point out by Sir Charles Trevelyan, "Irrigation is everything in India, water is more valuable than land because when water is applied to land, it increases its productiveness at least six fold." Moreover Dr. Knowles observed, "The irrigation works have provided security of life, than have increased the yields and the value of the land and the revenue derived from it. They have lessened the cost of famine relief hand have helped to civilize the whole region."

In our country development of irrigation in the past had taken place as a measure of famine relief. In India infact famines gave birth to the idea of irrigation. Now with the population multiplying rapidly, irrigation has assumed greater importance for augmenting agricultural production. The importance of irrigation may be judged from protective and productive angles. The protective irrigation makeup the moisture deficiency in soil to ensure proper and sustained growth of crops. The productive irrigation enables raising of second and third crops on the lands provided with irrigation which could otherwise not be cultivated efficiently more particularly during the post and pre-monsoon period. While the protective aspect helps in stabilizing agricultural production against droughts, the productive aspect can not be neglected by an agriculturist. Irrigation has third aspect also it helps in augmenting and preserving the properties of soils by application of adequate supply of water.

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STUDY AREA:

Beed district is situated in central part of the Maharashtra. It lies between 18°27' to 19°27' north latitude and 74°49' to 76°44' east longitude. It is surrounded by Aurangabad, Jalna in the north, Parbhani and Latur in the east, Ahmednagar and Osmanabad in south and Ahmednagar in the West. (Map no-1) Godavari is the most significant river that flows on the borderline of Georai and Majalgaon tahsils. Beed is situated in the Deccan black basalt stone, range of Balaghat that constitutes main range from Ahmednagar in the west, to the border of district Beed in the east. This range divided the district into two parts. The plain area in the north is called as Gangathadi (bank of Ganga-Godavari) and the higher part is called as Ghat at Balaghat. Balaghat range height is between 2000 to 2200 feet, whereas that plain called Gangathadi have the heights between 1200 to 1500 feet from the sea-level. District has three major irrigation projects, sixteen medium projects and 118 minor irrigation project and its benefits to 143663 hectares agricultural area under irrigation.

AIM AND OBJECTIVES:

The main object of study is to determine irrigation intensity of the region and to show the areal distributions.

DATABASE AND METHODOLOGY:

The investigation is totally based on relevant secondary data obtained from the District statistical officer, district irrigation department and district socio-economic review. The analysis investigate ranking of source wise irrigation and the average tahsil wise intensity of irrigation in Beed district the year during the year 2008-09 to 2010-11. Irrigation intensity means the percentage ratio between the irrigated area and the total agriculture area. The following formulae has been used in order to measure irrigation intensity

$$\text{Irrigation intensity} = \frac{\text{Total irrigated area}}{\text{Total Agricultural Area}}$$

The above formula is to find the percentage ratio between the irrigated area and the total agricultural land area. This helps in determining the percentage of the agricultural area which still requires the development of the irrigation facilities. It also helps us in finding whether; the available irrigation facilities are sufficient or deficient to meet the irrigation requirements or the agricultural area available in the study region.

DISCUSSION:

The irrigation facilities are very restricted and limited in Beed district. The major source of irrigation are canal, tanks, wells & tube wells among the various sources of irrigation, well and tube-wells irrigated nearly 49.55% of the total irrigated area, 32.40% of the area is irrigated by canals and about 18.03% of area irrigated by tanks.

i) Wells and tube wells

Wells and tube wells irrigation is an important indigenous source of irrigation in the Beed district and crop pattern is better developed in areas irrigated by wells and tube wells due to regular and dependable supply of water also.

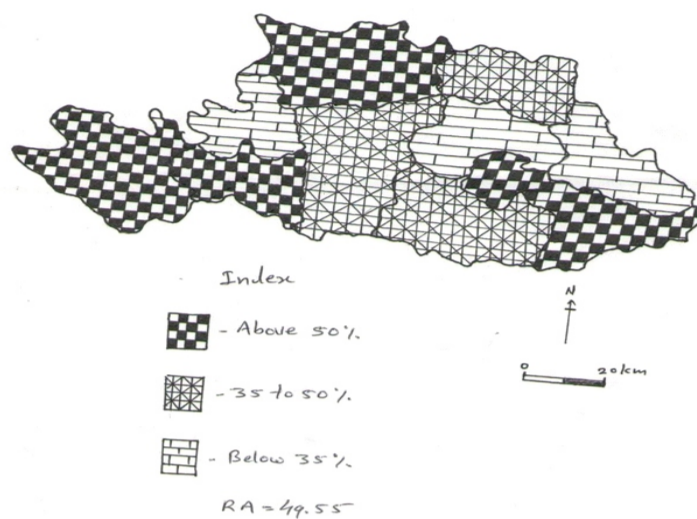
Table No 1
Source wise Irrigation in Beed district.
2008-09 to 2010-11(Area in Hectors)

Sr. No.	Tahsil	Tank	Canal	Well & Tube well	Total
1	Ashti	8206 (27.74)	6028 (17.44)	20330 (58.81)	34564
2	Patoda	4198 (18.20)	2060 (8.93)	16800 (72.85)	23058
3	Shirur Kasar	6209 (42.20)	3598 (24.45)	4903 (33.33)	14710
4	Georai	5435 (12.13)	14925 (33.33)	24415 (54.52)	44775
5	Majalgaon	1298 (3.63)	19246 (53.85)	15191 (42.51)	35735
6	Wadwani	2626 (31.31)	2964 (35.34)	2795 (33.33)	8385
7	Beed	10705 (43.51)	1612 (6.55)	12281 (49.92)	24598
8	Kaij	5554 (13.68)	18992 (46.79)	16040 (39.52)	40586
9	Dharur	2126 (9.13)	1230 (5.25)	19916 (85.57)	23272
10	Parli (v.)	3975 (17.19)	17443 (75.43)	1705 (7.37)	23123
11	Ambejogai	4710 (14.56)	10781 (33.33)	16853 (52.10)	32344
Total		55042 (18.03)	98879 (32.40)	151229 (49.55)	305150

Source: - computed by author.

Table no. 1 shows that the wells and tube-wells irrigation is largely used in the district. Above 50 % wells and tube-wells irrigation found in Ashti (58.81), Patoda (72.85), Georai (54.52) Ambejogai (52.10) and Dharur (85.57) Tahsil about 35% to 50% wells and tube-well irrigation observed in Majalgaon (42.51), Beed (49.92) and Kaij (39.52) Tahsil. Where as below 35% wells and tube-wells irrigation noticed in Shirur Kasar (33.33) Wadwani (33.33) and Parli (7.37) tahsil during the period of 2007-08 to 2009-10 triennial average. Highest wells and tube-wells irrigation has noticed in Dharur (85.57) Tahsil and lowest found in Parli (7.37) tahsil. (Map No. 2)

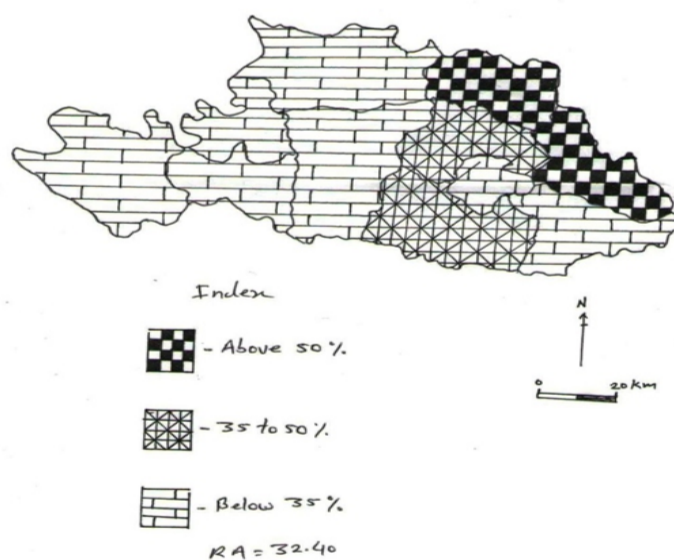
Map No. 2
Well & Tube-Well Irrigation in Beed District



ii) Canal Irrigation:

It is essential to utilize and harness agricultural water. Attempts should be made to use available surface water to the maximum possible extent. The tables show that, above 50% canal irrigation observed in Majalgaon (53.85) and Parli (75.43) tahsil, wherever 35% to 50% canal irrigation found in Kaij (46.79) and Wadwani (35.34) tahsil and about below 35% canal irrigation noticed in Ambejogai (33.53) Georai (33.33), Shirur Kasar (24.45), Ashti (17.44), Patoda(8.93), Beed(6.55) and Dharur (5.28) tahsil. Highest canal irrigation area has found in Parli (75.43) tahsil and lowest irrigation area has found in Dharur (5.28) tahsil during the course of study in Beed district (Map No. 3)

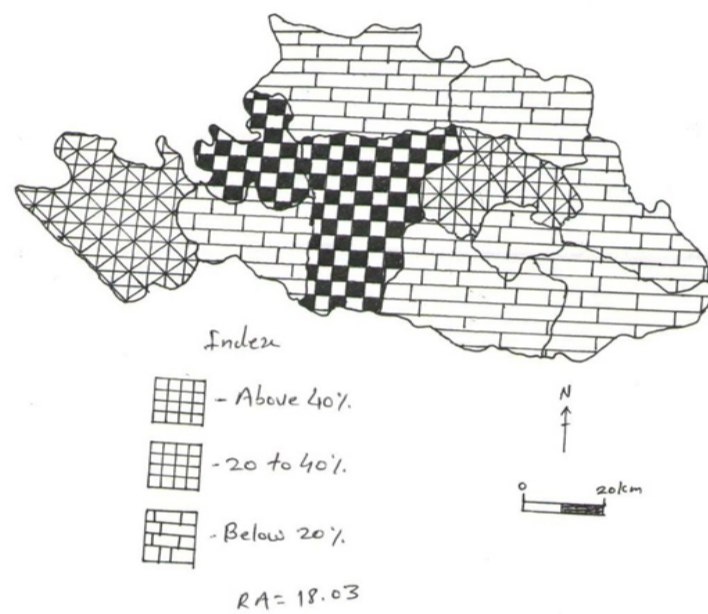
Map No. 3
Canal Irrigation in Beed District



iii) Tank Irrigations:

The result of tank irrigation is poor in the district above 40% tank irrigation found in Shirur Kasar (42.20) and Beed(43.51) Tahsil, Whereas 20% to 40% tank irrigation noticed in Wadwani (31.31) and Ashti (27.74) tahsil and about below 20% tank irrigation observed in Ambejogai (14.56), Patoda (18.20), Parli (17.19), Kaij (13.68), Georai (12.13), Dharur (9.13) and Majalgaon (3.63) tahsil highest tank irrigation has found in Beed (43.51) and lowest tank irrigation has noticed in Majalgaon (3.63) tahsil during the period of investigation (Map No. 4)

**Map No. 4
Tank Irrigation in Beed District**



Irrigation Intensity:

If the irrigation intensity is 100 then it proves that the entire agriculture area is irrigated and if it is less than 100 it indicates lower irrigation intensity.

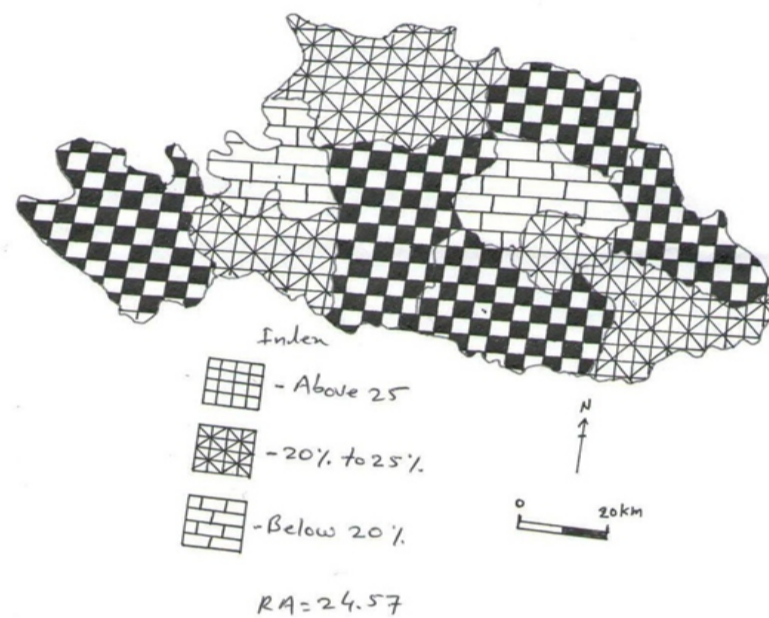
Table No. 2
Irrigation intensity in Beed district
2008-09 to 2010-11(Area in Hectors)

Sr. No.	Tahsil	Total Agricultural Area	Total Irrigated Area	Irrigation intensity
1	Beed	84966	24611	28.96
2	Georai	128975	26212	20.32
3	Majalgaon	69851	20705	29.64
4	Parli (v.)	43494	15509	35.62
5	Ambejogai	67799	14242	21.08
6	Kaij	94092	27740	29.48
7	Dharur	63272	14991	23.69
8	Wadwani	110234	20972	19.02
9	Patoda	55712	11318	20.31
10	Ashti	157958	41310	26.15
11	Shirur Kasar	44940	8760	19.49
Total		9,21,293	2,26,370	24.57

Source: - socio economic review

Table No. 2 shows the irrigation intensity calculated on the basis of formula, it is discovered that the irrigation intensity in the Beed district is only 24.57 %, in other words only 25 percent of the total agricultural land area is irrigated and the rest 75 percent of the area still needs development of irrigation sources. In Beed district above 25% irrigation intensity found in Beed, Majalgaon, Parli, Kaij and Ashti Tahsil. Where as 20% to 25% irrigation intensity observed in Georai, Ambejogai, Dharur and Patoda tahsil and below 20% irrigation intensity noticed in Wadwani and Shirur Kasar tahsil during the period of 2008 - 09 to 2010-11 (Map no. 5)

Map No.5
Irrigation Intensity of Beed District



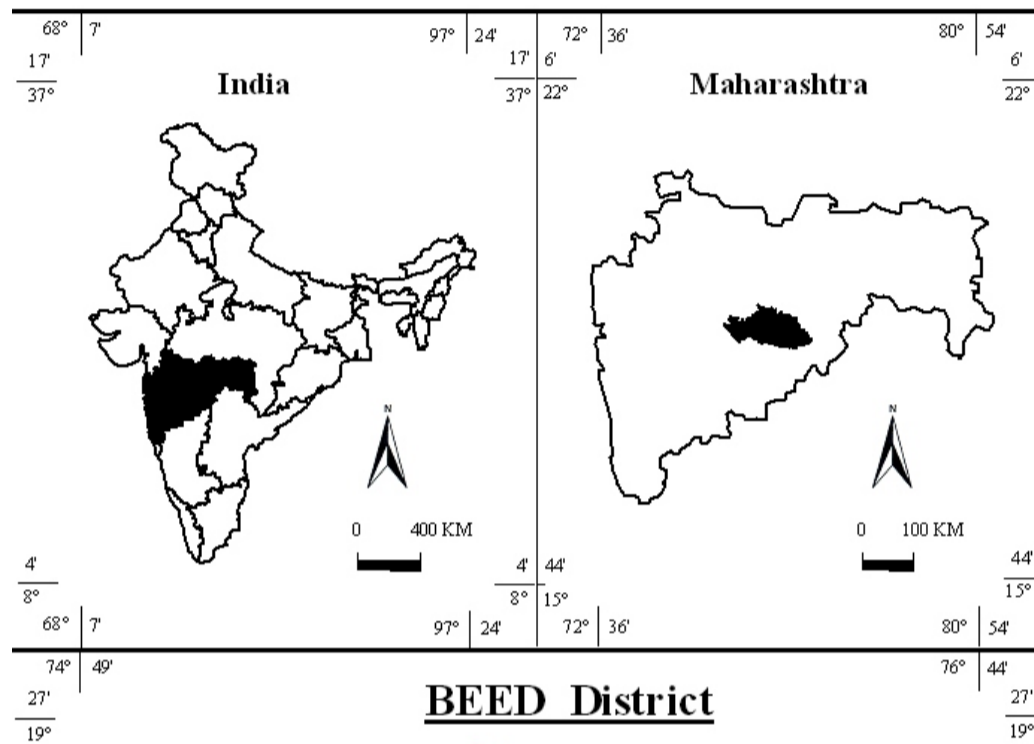
CONCLUSION AND REMARKS:

It can be concluded that irrigation is least practiced in Beed district. However its need to increase irrigation facilities in the district for the development of agricultural potential. There is least practice of tank irrigation it should be increased. A full exploitation of the agricultural potential of Beed district requires the development of tank and canal for water resources of the district for irrigation.

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DISTRICT
Location Map



BEED District

