



Levels of Agricultural Technology in Jalna District

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Introduction :

Mechanised agriculture or agricultural mechanization is the use of machinery and equipment, ranging from simple and basic hand tools to more sophisticated, motorized equipment and machinery, to perform agricultural operations. In India technological innovation have made a significant impact and both agriculture pattern productivity. Farmers in such areas prefer the modern technology to maximum agricultural production. Modern farm mechanization of agriculture refer here to modern farm machinery used for different farm operation. Present study has been made here to understand the levels of agricultural technology in Jalna district.

Keywords - *Irrigation Technology, Fertilizer and Greenhouse, Seed Technology.*

Location :

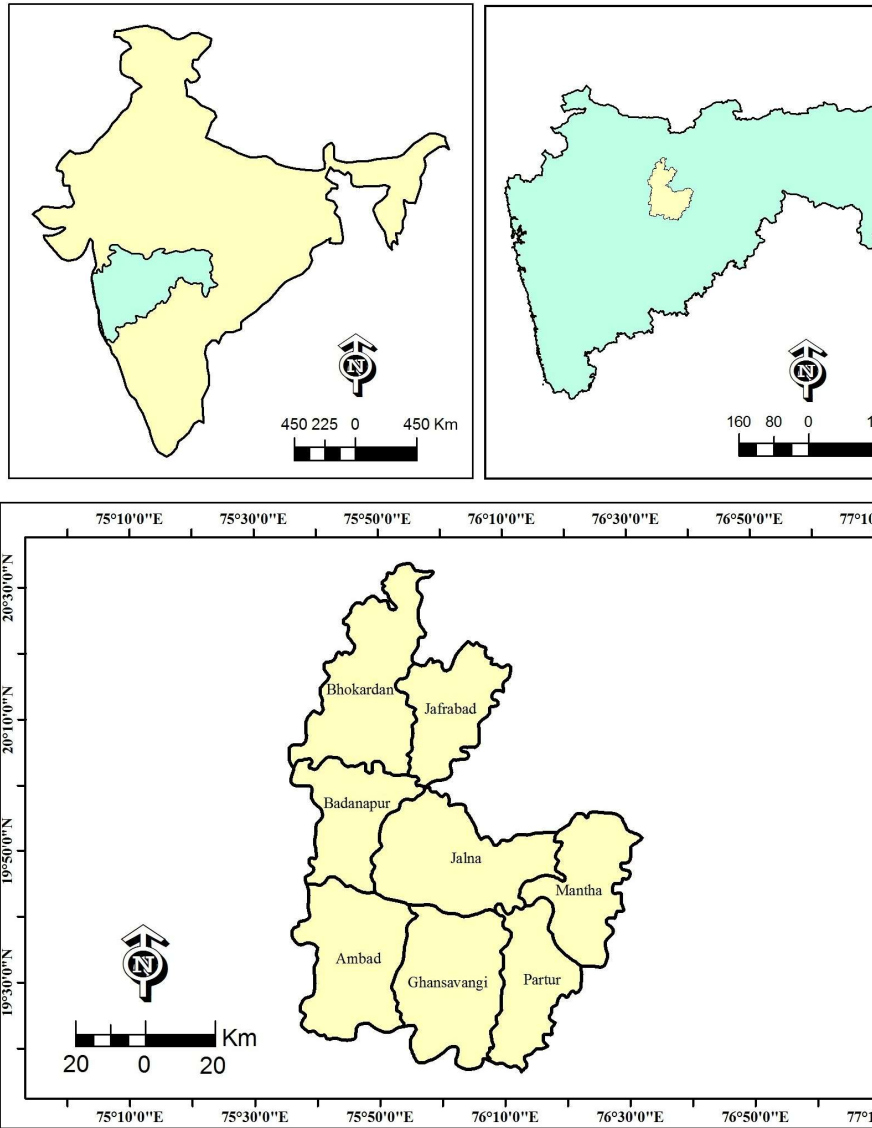
Jalna district is situated in the central part of the Maharashtra state of republic of India and northern direction of Marathwada region. Especially district lies between 19⁰¹' North to 21⁰³' North latitudes and 75⁰⁴' East to 76⁰⁴' East longitude.

Jalna district erstwhile a part of Aurangabad district was formed on 1st May, 1981 by carving out Jalna district, Bhokardan, Jafrabad and Ambad tahsil of Aurangabad district and Partur tahsil of Parbhani district. The boundaries of Jalna are adjacent to Parbhani and Buldhana on east, Aurangabad on west, Jalgaon on north and Beed on south. Jalna district covers an area of 7,727 sq. km which is 2.51 percent of the total state area. It has population of 19.58 lakh as per 2011 census. Recently Jalna district is divided into eight tahsil for administrative purpose these are Jalna, Ambad, Bhokardan, Jafrabad, Badnapur, Partur, Mantha and Ghansawangi.

According to 2001 census 971 villages situated in Jalna districts. There are 806 gram-panchayat and 157 group grampanchayat. Krushi Utppann Bazar Sameetee located at Jalna, Ambad, Bhokardan, Partur and Mantha tahsil. Eight panchayat samities in Jalna districts.



Location map of Jalna District



Map No 1.1



Objectives :

1. To study the regional imbalance and levels of agricultural performance and levels of agricultural technology in study region.
2. To study the regional variations in agricultural development of Jalna District.

Methodology :

For computation of the levels of technology the equation evolved by Dutta and Sen Gupta (1969) which has been further modified by Jasbir Sing (1994) is employed here and composite index values have been derived the equation as under

Ite - The composite index of the level of technology.

$$Ite = \frac{I_e}{I_r} + \frac{T_e}{T_r} + \frac{Toi_e}{Toi_r} + \frac{Poi_e}{Poi_r} + \frac{Cf_e}{Cf_r}$$

I - Percentage of irrigated area to total cultivated area.

T - Tractors per 1000 hect. Of cultivated area.

Toi - Tractor operated implements per 1000 hect. Cultivated area

Poi - Power operated implements per 1000 hect. Of cultivated area.

Cf - Use of chemical fertilizers in Kilogram per 1000 hect. Of cultivated area. e and r subscripts symbolize respectively the tahsil and entire region (district)

Degree of Agricultural technology $= \frac{ELQS}{N} \times 100$

The above procedure is adopted to compute the index value of each tahsil. The summed up index values of all parameters then multiplied by 100 to derive the degree of agricultural technology.

LEVEL OF AGRICULTURAL TECHNOLOGY

After the calculating of index values for each tahsil the entire region can conveniently be divided into three categories. Following are the important factors responsible for the levels of agriculture technology in Jalna district.

1. Irrigation Technology in Jalna district.



2. Farm Implementation Technology in Jalna district.
3. Fertilizer and Greenhouse Technology in Jalna district.
4. Seed Technology in Jalna district.

1. Irrigation is one of the the artificial application of water to overcome deficiencies in rainfall for growing crops. Availability of irrigation not only helps the farmers to make use of fertilizers and new varieties of seeds but also helps to raise the cropping intensity in agriculture thereby raising the level of output and farm income. Maharashtra state records nearly 15 percent irrigated area compared to national 18 percent. Different sources of irrigation have helped increase in growth of crops in the study area. Well, canal, tank and lift are major irrigation technologies.

2. Farm implementation Technology has also huge contributed to the agriculture in Jalna district. Mechanization of agriculture is one of the important for agricultural development, which in turn reflects the social, economic background of the regions.

3. Adaptation of high yielding seeds varieties is also responsible for the agricultural growth in Jalna district. Crop wise regional distribution of improved seeds of cotton, jowar, bajra, wheat, sugarcane and sunflower have helped growth of agriculture in the study region.

4. Fertilization and Greenhouse technology have also contributed substantially towards the agricultural growth in the Jalna district. Fertilizer consumption has increased in recent decade and increases in agriculture output as a result. Based on consumption of fertilization and the study region has been divided into high, medium and low consumption regions,

1) Region of High Level of Agricultural Technology

It includes the four tahsils namely Ambad, Jalna ,Ghansawangi and Partur which recorded high (Above 100 index value) level of agricultural technology. This zone has characterized by assured irrigation facilities, sustainable development of agro-industries, forward looking attitude of farmers, substantial income from sugarcane and Cotton and positive role of co-operatives regarding financial assistance to farmers. All these made to high level of agricultural technology. (Fig.1.2)

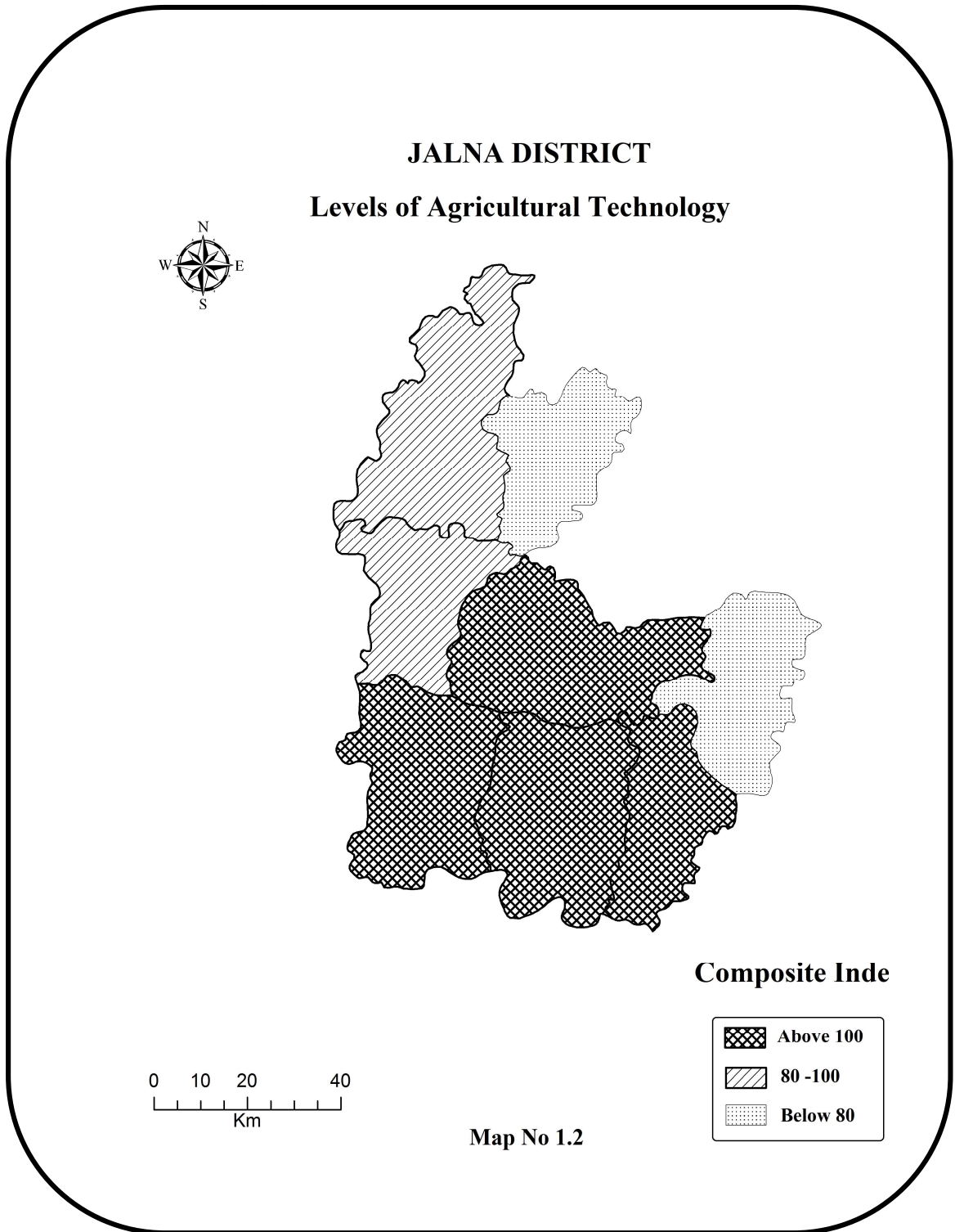


Table No. 7.1
Regional Pattern of Agricultural Technology in Jalna District

Sr.No.	Region	Index Value	Tahsils
1	Region of high level of technology	Above 100	Ambad, Jalna Ghansawangi Partur
2	Region of Moderate level of technology	80 to 100	Badnapur Bhokardan
3	Region of Low level of technology	Below 80	Jafrabad Mantha

Source: Compiled by the researcher

2) Region of Moderate Level of Agricultural Technology

This zone of the moderate level of agricultural technology (between 80 to 100 index value) is observed in Badnapur, and Bhokardan tahsils of the district. Due to the medium level of irrigation facilities and limited cultivated area under cash crops. (Fig.1.2)

3) Region of Low Level of Agricultural Technology

It includes Jafrabad, Mantha tahsils of eastern part of the district (Fig.1.2) recorded low level of agricultural technology (below 80 index value). This is mainly due to lack of irrigation and fertilizers. Because of this, farmers in such area are unable to allocate more land under cash crops which can fetch them high income.

Conclusion :

The above study shows that the district marks regional imbalance in level of agricultural technology, level of agricultural performance and level of agricultural development. The study also shows that these factors are closely associated with each other. Agricultural technology plays a important role in enhancing the crop production. Level of agricultural technology shows that its high proportion is confined to the area having high intensity of irrigation (Jalna ,Ambad,Partur,Ghansawangi), high income from sugarcane and cotton cultivation. Badnapur and Bhokardan tahsils are included in moderate level of agricultural technology and remaining tahsils as Jafrabad and Mantha have low levels of



agricultural technology due to inadequate irrigation, low quality of soil, poor economic condition of farmers.

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