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GRT **ROLE OF NON PHYSICAL DETERMINANTS ON AGRICULTURAL DEVELOPMENT IN AHMEDNAGAR DISTRICT OF MAHARASHTRA**

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Abstract:-The present investigation aims to analyzing the role of non physical determinants on regional disparities in agricultural development in Ahmednagar district. Present study based on secondary data source which have been obtained district socio economic abstract. For analysis of tahsil wise disparities some appropriate statistical techniques have been employed. Major five non physical variables viz. irrigation, chemical fertilizer, farm implements, credit facilities and livestock has taken into consideration. The use of non physical determinants is depends on availability of irrigation facilities. It means that irrigation plays the vital role in agricultural development of study region. The northern tahsils of the district is highly developed than southern thasils.

Keywords:Agriculture, Regional disparities, Composite Index, Non physical determinant.

INTRODUCTION

Agriculture, as the largest private enterprise in India has been and will continue to be the lifeline of the Indian economy (N. Narayana 2007). It is widely acknowledged that the development of agriculture is the prerequisite of the overall economic development of the country. The agriculture sector contributes nearly 14.5 percent of the GDP whereas the depending population is still remains 58.5 percent (RBI-2009). The implementation of the modern technologies, high yielding seeds and use of chemical fertilizers has shift the agriculture status from food shortage and begging bowl to food self sufficiency, buffer stock and food export particularly during the post reforms period (R. Panda 2009). The success of the green revolution has the multiplier effects on economy in general and to that of rural economy in particular. The shift in cropping pattern causes for the increase in employment in agriculture sector. The increase in agriculture production boost the agro-based industries, employment, income generation, transport and communication, education and health facilities and thereby increase in standard of living of rural masses (A. Munir 1992).

Non physical variables have made a significant impact on both agricultural pattern and productivity (Singh, I and Singh, S. 2006). These variables is irrigation, chemical fertilizer, farm implements, high yielding variety seeds, credit facilities, use of pesticides, livestock etc. Less or more use of these variables shows the regional disparity in agricultural production as well as regional development (Hangaragi S.S 2012). However, supporting measures such as soil conservation, agricultural credits, marketing facility, transport facility, agricultural research, market price of agricultural commodities and government policies have also influenced agricultural pattern, growth and productivity (J. Singh and S. Dhillon 1989).

The Study Region

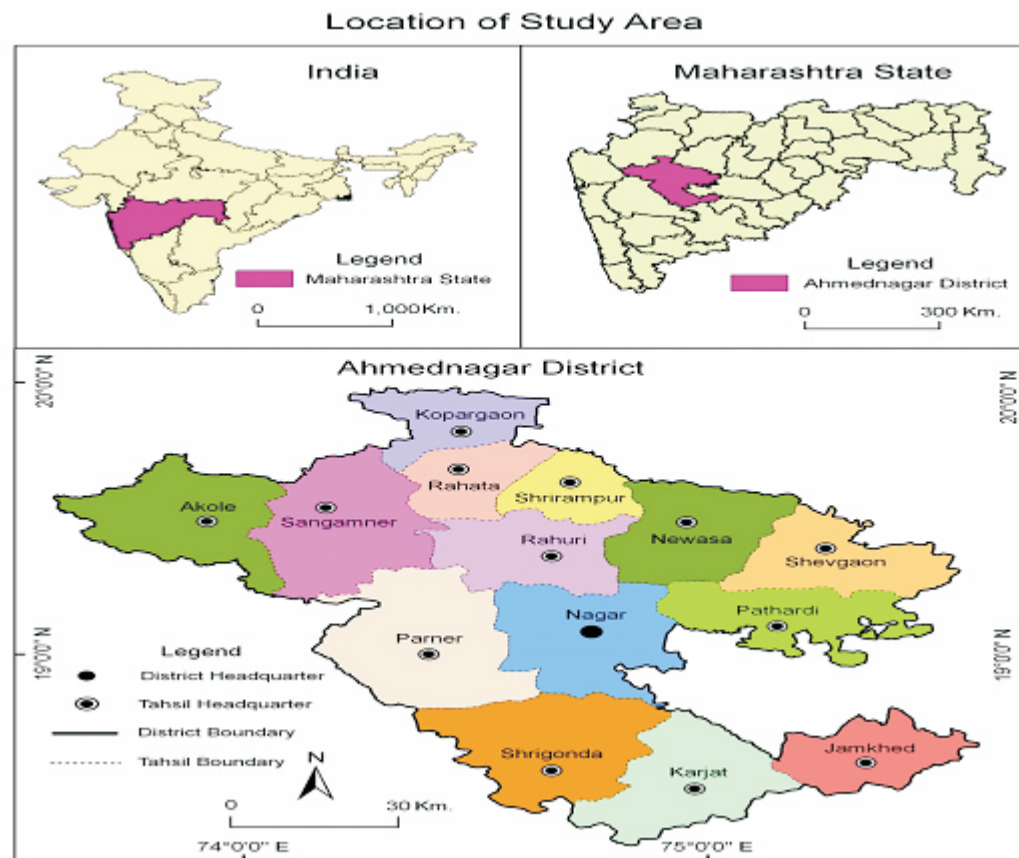
For the present study Ahmednagar district in Maharashtra has been selected as a study area. It extends between 18° 20' and 19° 59' north latitudes and 73° 40' to 75° 43' east longitudes (Fig.1) and situated partly in the upper Godavari basin and partly in the Bhima basin. The district is very compact in shape and length of 200 km. and a breadth of 210 km. This study region is divided into three physical divisions, namely, Sahyadri hill ranges i.e. Kalsubai, Adula, Baleshwar and Harishchandragad, Plateau and plains. The river Godavari, Bhima and there tributary (Paravara, Mula, Sina, Kukdi and Dhora) are the main rivers in this district. The discharge of rivers is mainly depending on rainfall in western ghat.

Ahmednagar district occupies 17,048 square km geographical area. For administrative purpose it is divided into 14 tahsils. The average annual rainfall in the district is 578.8 mm. (22.79"). The mean daily maximum temperatures are 39° centigrade and mean daily minimum temperature is 11.7° centigrade. In study region 71.10 percent area under cultivation out

Role Of Non Physical Determinants On Agricultural Development In Ahmednagar District Of Maharashtra

of them 32.40 percent is irrigated and 67.60 are rain fed. Its Population is 45, 43,083 (Census 2011) in which male and female are 2,348,802 and 2,194,281 respectively. The density of population was 266 persons per square kilometers out of them 80.11 percent persons are residing in rural areas and remaining 19.89 percent in urban areas. The economy of the district is primarily depends on agriculture.

The variations in climate, soil, drainage, irrigation facility have a predominant influence on cropping pattern in study area. Cropping pattern is different in irrigated and rain fed areas. The rivers and its left and right canals is the source of irrigation as well as Well irrigation is commonly used.



Sugarcane is the predominant crop in the rivers and canal area. In Kharif season Bajara, Corn, Pulses, Cotton, Oilseeds like Groundnut, Soyabean, Rice, Cerials etc. are grown and in Rabi season Wheat, Jowar, Corn, Gram, Onion, Sunflower are grown in study region.

OBJECTIVES OF STUDY

- a. To study the disparities of non physical determinants in study area.
- b. To analyze the level of development based on non physical indicators across different tahsils in Ahmednagar district.

DATABASE AND METHODOLOGY

The secondary data regarding non physical variables for the year 2010-11 have been obtained from socio economic abstract of Ahmednagar district. Composite index has worked out to investigate the regional disparities in the levels of agricultural development. For this the five non physical indicators i.e. irrigation, chemical fertilizer, farm implements, credit facilities and livestock is taken into consideration. The ratio of selected indicators to net sown area has been calculated. For this following methodology has been used.

For example -

From the calculation of irrigation index proportion of irrigated area to net sown area for each tahsil is calculated by the following formula.

$$I_i = \frac{X_j}{X_n}$$

Where

I_i = Index of Irrigation
 X_j = irrigated area of the j tahsil.
 X_n = net sown area of the j tahsil.

Similarly proportion of total irrigated area to total net sown area of district has calculated; the proportion of the whole region is represented by X_{ij}. Then the index of irrigated area to net sown area for the tahsil will be

$$I(i)t = \frac{I_i}{X_{ij}} \times 100$$

In the same way above index for six indicators has calculated for all tahsil the index values are represented by

I(i)t, I(ii)t, I(iii)t, I(iii)t etc.

To give integrated picture of agricultural development in Ahmednagar district based on five parameter the composite index of each tahsil have calculated by using following formula.

$$\text{Composite Index} = \frac{I(i)t + I(ii)t + I(iii)t + I(iv)t + I(v)t}{5}$$

The composite index values of the tahsils have divided in to three equal groups to delineate the zones indicating the levels of agricultural development viz. High, Moderate and Low level of development (table 1).

Table 1 Class Based on Composite Index

Sr. No	Category	Index Value	Number of tahsils	Percent to total tahsils
1	High developed tahsils	121.82 to 154.22	5	35.71
2	Moderate developed tahsils	89.41 to 121.81	3	21.42
3	Low developed tahsils	56.99 to 89.40	6	42.85

Source: Compiled by researcher

RESULT AND DISCUSSION

Table 2 reveals comparative levels of agricultural development varies from tahsil to tahsil in study area. The distribution patterns of these variables are impact on agricultural landuse as well as productivity.

Table 2 Index Number of Irrigation, Livestock, Farm Implements, Chemical Fertilizers and Credit Facilities to Net Sown Area.

Sr.No	Tahsil	Irrigation	Farm Implements	Livestock	Chemical Fertilizer	Credit Facility	Composite Index
1	Nagar	45.95	22.72	86.83	75.37	77.98	61.77
2	Rahuri	179.86	80.67	134.61	149.20	118.19	132.51
3	Shrirampur	181.80	70.19	92.64	199.50	120.12	132.85
4	Newasa	269.98	99.95	104.39	126.80	142.14	148.65
5	Shevgaon	37.69	25.68	108.49	133.48	115.41	84.15
6	Patherdi	58.72	75.42	116.60	69.84	69.50	78.02
7	Jamkhed	29.43	83.02	97.38	79.79	66.64	71.25
8	Karjat	33.48	49.11	66.63	79.26	74.79	60.65
9	Shrigonda	86.83	56.42	97.92	96.89	150.87	97.78
10	Parner	70.36	135.2	101.66	45.86	149.73	100.56
11	Akole	32.34	117.83	84.53	45.26	4.98	56.99
12	Sangamner	74.38	92.4	129.03	113.69	70.12	95.92
13	Kopergaon	143.87	100.43	91.30	198.93	144.11	135.73
14	Rahata	269.98	210.09	77.37	128.18	85.46	154.22

Source: Compiled by researcher

A) High Developed Tahsils

This zone comprises 35.71 percent tahsils in the district these are located in northern part of study area. The tahsils namely, Rahuri, Shrirampur, Newasa, Kopergaon and Rahata included in this zone. In these tahsils more than 50 percent area is under irrigation. Due to availability of irrigation facility farmers has promoting to cultivation of cash crops like sugarcane, oilseeds as well as food crops. This is the cooperative sugar industrial zone of the district so healthy cooperative farmers societies provide credit to farmers for applying advanced agricultural technology. The use high yielding variety seed, chemical fertilizer, modern farm implements is higher than the other tahsils. Due to availability of green fodders, cattle's population is more in these tahsils. It means that development of any region depends on irrigation facility.

Besides this transportation network, literacy of farmer and effective market facility has contributed to agricultural development in these tahsils. The agricultural productivity of these tahsils is high compare to other tahsils of Ahmednagar district.

B) Moderate Developed Tahsils

The moderate level of agricultural development was observed west and south part of district it was 21.42 percent to total tahsil in district. The tahsils Shrigonda, Parner and Sangamner comes under this category. There are 32.16 percent net irrigated area in tahsil Shrigonda while 26.06 and 27.55 percent in Parner and Sangamner tahsil to net sown area respectively. Total numbers of livestock were observed as 208059 in Shrigonda, 246987 in Parner and 267735 in Sangamner tahsil. The chemical fertilizer use in these tahsils 17 to 45 percent to net sown area. The farm implements share to net sown area has 11.70 percent in Shrigonda, 28.03 percent in parner and in Sangamner tahsil has 19.15 percent. These tahsils largest part is cover by shallow soils and a relatively less irrigation. In short these tahsils has poor irrigation facilities and low level of modern technology as compared to the high level of agricultural developed tahsils.

C) Low Developed Tahsils

Low level of agricultural development found in south and western part of district it includes six tahsil viz. Nagar, Shevgaon, Patherdi, Jamkhed, Karjat and Akole tahsils. It has covered 42.85 percent tahsils to total tahsil in district. The net irrigated area has below 12 percent in this tahsils. It means poor irrigation facility negative impact on use of high yielding

variety seeds, chemical fertilizer and improved farm implements. The tahsils Karjat and Akole large part cover by hilly area, due to this poor quality of soil and comparatively less transport and market facility, its adverse effect on agricultural development. In these tahsils needs suitable measures to promote agricultural development.

CONCLUSION

The distribution of non physical variables is uneven due to this regional disparities found in agricultural development in the district. In irrigated track framers grown cash and cereals crops while in rain fed track cereals and pulses. The tahsils having more infrastructural facility has high productivity. It means that productivity of agriculture largely depends on non physical variables. The tahsils namely, Rahuri, Shirampur, Newas, Kopergaon and Rahata included in developed category, while Shrigonda, Parner and Sangamner has moderate developed. However, tahsil viz. Nagar, Shevgaon, Patherdi, Jamkhed, Karjat and Akole has low developed according to availability of non physical variables.

REFERENCES

1. Hangaragi, S. (2012): 'The role of infrastructural facilities in structural changes of agricultural development in Karnataka state', 'Research volume on population and resources', edited by Prof. A. Rayamane, Vol: 2, pp 151-158.
2. Munir, A. (1992): 'Agricultural productivity and regional development', 'Anthropogenic dimensions in agriculture' edited by Noor Mohammad Concept publication, New Delhi, pp 71-80.
3. Narayana, N. (2007): 'Agricultural Situation in India: A fresh look in to the issues and challenges', 'Sustainable agriculture in drought prone region' edited by K. Dasaratharamaiah and M. Jayarai, Serials Publication, New Delhi, pp 1-19.
4. Panda, R. (2009): 'Agricultural development in India in the post performs – issues and challenges', 'Agriculture and rural economy' edited by R Sahoo and G Dash, Regal Publication, New Delhi, pp 14-20.
5. RBI (2009): Annual Report
6. Singh, I and Singh, S. (2006): 'Agricultural geography of India', Shirshiti publication, New Delhi.
7. Singh, J. and Dhillon, S. (1989): 'Agricultural Geography', Tata Mc Graw - Hill Publishing Company Limited, New Delhi, pp 155-162.

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