REGIONAL DISPARITIES OF AGRICULTURAL DEVELOPMENT IN AHMEDNAGAR DISTRICT, MS, INDIA.

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ABSTRACT

Agriculture plays a significance function in economic development of the country or region. Agricultural development is an essential part of generally economic development in the country e.g India. In favor of healthy agricultural development necessitate modernization and commercialization of agricultural. It is greatly potential if good agricultural infrastructure is providing to agriculture activity. At national and international with the local level such availability of agricultural infrastructure is not well distribution, which is responsible to create regional disparity in agricultural development. In ahmednagar district too such regional inequality in agricultural development is experiential in large scale. Therefore it is importance to highlight the less development agricultural region and tray to promote the agricultural development. The present work is to guideline for agricultural development with direction in tahisl level. The level of agricultural development has been determined on the basic of 10 variables and he calculated level of agricultural development he used Kendall's ranking co-efficient index method.

KEY WORDS: Agricultural development, co-efficient index, Kendall's method, Regional disparities, Ahmednagar District.

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INTRODUCTION: Development is a process, which improve the quality of life. It requires a balance human resource development in the country or region. Development of social sector beside with technology interest in agriculture and industry, which are the chief sectors of our economy, can be measured as the principal aim of any economic development efforts. Agriculture is the backbone of Indian economy causal 28 per cent of the Gross Domestic Product and agriculture individual the chief sector of economy, the rate of economic development of the country has been and silent carry on being considerably subjective by the rate of its agricultural development. Maharashtra is basically agricultural state. Indian economy is center on agriculture. About 58.2 percentages of Indian population is directly or indirectly dependent on agricultural. Agriculture and allied sectors contribution nearly 14.4 percentage of Gross Domestic Product of India (2012). Besides agriculture is an important source of raw material for industries products and serves as a vast market for the industrial product. It is in the agricultural sector that the battle for long term economic development will be won or lost. The agricultural practices cropping pattern and their productivity are closely determined by the geo- climate, socioeconomic, and cultural –political factors. (Majid Husan). A healthy and advanced agriculture creates demand for several industrial products like tractors, harvesters, threshers, chemical fertilizer, pesticides etc (khular 651). Agricultural development improves social and cultural development due to an increase in per capita income (Kazma khan & Lubna Khalil2003). Agricultural development is an integral part of overall economic development in the India. For well agricultural development requires modernization and commercialization of agricultural. It is highly possible if good agricultural infrastructure is provided to agriculture activity dominated area. At national or local level availability of such agricultural infrastructure is not well distributed which responsible to create regional disparity in agricultural development.

REGIONAL DISPARITIES:

Regional disparities in the levels of development are the invention of regional disparities in the distribution of physical resources, regional disparities in cultural events with the regional disparities framework etc. regional disparities in technological achievements have been mention as the third major factors (first physical second cultural) accountable for create regional disparities in the level of development. The factor dependable for such a technological separate in the world is not the arguable at this point. As technology is a vital input of development

strategies, therefore the regional disparities in the levels of technological improvement play a vital role in charitable rise to the regional disparities in the levels of development. There is a positive correlation between levels of technological improvement and levels of development. Other words the areas having achieved high level of technological development are possible to have high level of development. Regional disparities in the levels of development are not product of the regional disparities in the distribution of natural resources only but are the role of collective effect of regional disparities in the distribution of natural resources, cultural background, technological achievement and intuitional framework connected with the political conditions. The measurement of regional disparities in the level of development is not an easy task. The basic issues concerned in such a measurement are those of criteria, scale and techniques of measurement. There different approaches have often been used to review the level of development of an area and to evaluate the same with other region. These approaches are (a) the conceptual (b) the model (c) the spatial approach. In the conceptual approach, if the development is conceptualized say in terms of social development, the indicators of such a specific type of development too would have social bias and may include such indicators as social harmony, social justice etc. model approach some highly developed country is visualized as a model of development and other region are assessed in terms of development this model. Indicters are level of production, consumption, per capita GNP, literacy and education, energy consumption, environmental degradation etc. Spatial approaches indicators of development are conceptualized in terms of spatial parameters e.g health services, agricultural development, industrial development, transport, social development etc. (Chandna R.C)

Agricultural development is one of the fundamental elements of regional development. Agricultural development connotes the quality of performance of agricultural systems of a region in terms of productivity, diversification, commercialization, ecological balance etc. various indicators of agricultural developments, among other may includes (i) percentage of net sown area (ii) percentage of area sown more than once (iii) percentage of irrigated area (iv) percentage of area devoted to food crops (vii) percentage of area devoted to cash crops (viii) yield per hectare of various crops (ix) degree of mechanization of farming (x) availability of marketing facilities (xi) amount of capital in farming(xii)quantum of technology input into farming (xiii) percentage of agricultural workers to total workers. (Chandna R.C) The process of development

in the context of regional planning refers to the quality of functioning of a regional system. A regional system is a set of integrated region. The quality of functioning of a regional system could be measured in terms of the region economic growth, social advancement, changing polity and environmental conservation. Development is not only area specific but also time specific. In short development varies from area to area. Thus, development process believes any stable conceptualization. There are various disciplines like economic, sociology, political science, history and geography. These all disciplines are separated elements of development e.g economic elements are industrial, agricultural, and vary types of capital etc. social structures are family, marriage, and caste system etc. political scientists conceptualization of development has its focus on political context. Vary planning setup depend on the political structure and political economy with the role of government. Historical view was lies in the formulation of theories and models that may explain economic history and social history apart from political, economic, social history. It implies that historical focus is upon temporal changes in economic, social and political institutions and the models or any temporal models. Geography is perhaps one such discipline that offers a unique production of development of natural and human resources as the scholar conceptualisation of development is much more complete.

REVIEW OF REGIONAL DISPARITIES OF AGRICULTURAL DEVELOPMENT:

Regional disparities have happen to one of the vital evident and rising problems not only in developing countries but also in the most advanced or developed countries in the world. **Darekar A.S** (2014) he studied Inter-district disparities in agricultural development in Amravati division of Maharashtra. He used Composite Index method in period was 1989-2011. Development is continues process which improve the quality of life. It is requires a balanced human resource development in the any region. Development of social sector beside with technology combination in agriculture and industry, which are the principal sectors of economy, could be considered as the primary objectives of any economic development efforts. **Rachana Joshi** (2013) Regional development is the condition of abet and other backing to regions which are less economically developed. Regional development may be national and international in characters. The allegation and scope of regional development may therefore differ in agreement with the definition of a region, and how the region and its boundaries are apparent within and externally. He studied the causes of regional imbalance between states.

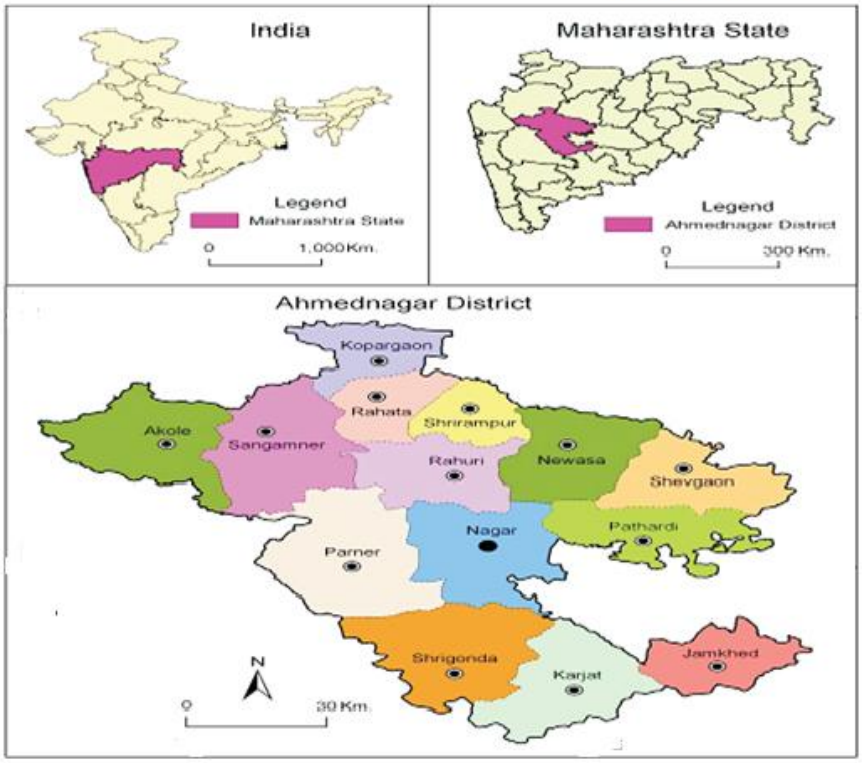
B. A. Ajagekar and N. S. Masal (2011) he studied Regional Disparities In The Levels Of Agricultural Development In Kolhapur District Of South Maharashtra, To determine the level of agricultural development in Kolhapur district we have selected 14 indicators and calculated level used, with the data assigned different weights to different indicators by the method of Proportional Standardized Mean, that is to say, the weight assigned to one indicator by composite index.

Pagar.S.D (2015) he works completed spatial analysis of agricultural development in Nashik District: A tahsil level study. He calculated about 10 variables in agricultural development, used the Kendall' Co-efficient index each tahsil. **Shamsul Haque Siddiqui et.al** (2014) he studied Regional disparities in the levels of development in Malda district of west Bengal: A block level study. Development is a multidimensional event, which not only carry out qualitative changes, but also quantitative growth of society. It has been suitably conceptualized as a process, which improves the quality of life of people. For increase speed the growth of a society in a sustainable way, it is essential to guarantee balanced regional development process. Due to irregular distribution of physical as well as human resources and socio-economic diversities, vast inter and intra-regional disparities is establish transversely the regions which is the matter of great fear for both developed and developing countries of world. Time to time Govt. planning keeps an objective out the inequality continue among different region by approved the regional interest as well as available resource potentials. Find out the regional disparities twenty three variables, out of which eight for social development, seven for economic development, and eight for demographic development. The composite Index technique has been used to find out regional disparities in the levels of development in the study area.

STUDY AREA: The present study Ahmednagar district 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 (Map.1) located in part in the upper Godavari basin. The district is very dense in shape and length of 200 km. a width of 210 km. This study region is divided into there are three physical divisions namely, first Sahyadri moutons ranges i.e. Kalsubai, Adula, Baleshwar and Harishchandragad, second Plateau third plains area. The Godavari, Bhima River is the main rivers in this district with the major tributaries are Paravara, Mula, Sina, Dhora, Kukdi ect. And

the recharge (water available) of rivers is mainly depending on rainfall in western ghat. Ahmednagar district occupies 17,048 square km geographical area. The administratively there are divided into 14 tahsils. The average annual rainfalls is 578.8 mm. (22.79") and mean daily maximum temperatures is 39°C and mean daily minimum temperature is 11.7° C. In study region 71.10 percent area under cultivation area out of them 32.40 percent is irrigated and 67.60 percent rain fed or rain shadow area. Its Population is 45, 43,083 (Census 2011) in which male and female are 2,348,802 and 2,194,281 correspondingly. The density of population was 266 persons per square kilometers. The economy of the district is chiefly depends on agriculture activities. The variations in climate, soil, drainage, irrigation facility have a predominant influence on agricultural in study area. The cropping pattern is different each irrigated and rain fed areas (Map no 01).

Location of Study Area **Map No:01**



OBJECTIVES: The main objectives of the present researches are as fallows.

1. To analyze and find out the agricultural development in the study area.
2. To analyze the availability of agricultural infrastructure for agricultural development in study area.

DATA & METHODOLOGY: The research paper is based on secondary data which has obtained from the Socio-economic abstract, government publication Ahemdnagar district (2013-14). All data were suitably converted into tables draw for analysis the agricultural development of the study area. The used Kendall's ranking co-efficient index method (1939) is used to determine the level of agricultural development in the study area. In the firstly he calculated the percentage of all variables second match the highest to lowest value remark the numbers and lastly sum the rank of all variables finally calculated the co-efficient index, match the level of agricultural development in tahsil wise. The level of agricultural development has been determined on the basic of 10 variables they are as follow.

X1=Percentage of Cross cropped area; **X2**=Percentage Irrigated area; **X3** =Percentage of Number of Tractors; **X4**=Percentage of Literacy; **X5**=Percentage of Iron Plough; **X6**= Use of electricity for agricultural in Percentage; **X7**= Number of agricultural credit society in Percentage; **X8**= Use of fertilizers for agriculture in Percentage; **X9** = Number of Electrical Pump used for irrigation in Percentage; **X10**= Percentage of Major cash crops(Grapes, Sugarcane, Onion ,& other Vegetables) By using data about above 10 variables the co-efficient index is calculated for each tahsil of the study area by using the Kendall's co-efficient index method. The co-efficient index is inversely related to development i.e lower the index more development and higher the index low the development. For the calculation of Co-efficient index, following formula of Kendall's is used. Kendall's $\text{Co}-\text{efficient Index} = \frac{\sum \mathbf{R}}{\mathbf{N}}$ **Where,** $\sum \mathbf{R} =$ **Sum of rank , N= Numbers of variable**

RESULTS & DISCUSSION:

The variable for agricultural development in the variable are selected to determine the level of agricultural development in the study area. These entire variables are showing in the table no 01, 02 and 03. There are ten variables in agricultural sector he calculated by first percentage second rank of variables in percentage wise and lastly calculated the Co-efficient index.

- **PERCENTAGE OF CROSS CROPPED AREA (X1):**
- This is a vital variable to determine the level of agricultural development in the study area. The variable, area under cultivation of the region it is first in 11% in Nevasa thasil other wise last rank (14 rank) 1.3% in Parner thasil.

- **Percentage Irrigated area (X2):**

Water is fundamental key in agricultural. Agricultural development contribute of artificial water in the form of irrigation is important. Irrigation is essential for approximately any kind of agricultural development and requirement for the achievement of modern technology in agricultural (Gomatee et.al). The Nagar tahsil having maximum irrigated area 21% followed by Shevgaon 20%, Rahata 8.1% and it is very low irrigated area was Akole, Pathardi, Karjat and Jamkhed tahsil.

- **Percentage of Number of Tractors (X3):**

Tractors also helps to increase cropping intensity by facilitate the farmer to save time and therefore grown an extra new crops to apply more area and existing crops. The maximum use of tractors is found in kopargaon tahsil 20.89% next sangamner 20.89%, third rank shevgaon tahsil whereas it is very less in position was shrigonda tahsil 0.889%. Because no agricultural development due to low income of framers and not in condition to buy tractor for agricultural operation.

- **Percentage of Literacy (X4):**

Literacy is one of vital elements on the agricultural development because the expression literacy is one of the very significant qualitative indictors of social development connected to the economic development. Even today education is the most wonderful tool for changing the socio-economic status of a human being and society as a whole. Literacy effect on making agricultural knowledge, use of new technology and fertilizers, seeds etc. The maximum literacy was nagar thasil 7.92692%, rahata 7.54669 %, shrirampur7.53224% and last rank jamkhed 6.68419%. thasil

- **Percentage of Iron Plough(X5):**

This is another importance variable which is used to establish the agricultural development. With the help of iron plough farmers facilitate to take out farming action more fast for pouching the agricultural land. In the use of iron plough ranking of top first parner 19.5%, shevgaon 16.2% and third akole 13.5% and last rank was shrirampur 1.8% and kopargaon thasil 1.94%.

- **Use of electricity for agricultural in Percentage (X6):**

The use of pumping set for irrigation requires power to draw underground water for purpose of cultivation. The area of standard use of irrigation increased the use of electricity. In the study area use of electricity for agriculture is highest in kopargaon 42.9%, nagar 9.19% and third akole 6.5% thasil it is lowest shrigond 2.6 % and last rank was pathardi 2.52% thasil.

- **Number of agricultural credit society in Percentage (X7):**

Agricultural credit is measured as an important infrastructure facility for agricultural development. For the principle of agricultural development, the farmer needs capital. It is need for digging well, establish a tube well, purchase of seeds, fertilizers and other agricultural implements. The main source of agricultural development on credit is agricultural co-operative society. Such societies supply loans for farmers for creative purpose. Therefore used of credit societies is very important for agricultural development because the capital intensity, capital viabilities depend on credit societies. The availabilities of such credit societies are highest in sangamer 10.82%, nevasa 10.66% and third shrigonda 10.18% and lowest position pathardi 6.73% and karjat 1.362% thasil.

- **Use of fertilizers for agriculture in Percentage (X8):**

The use of fertilizers is very important roles in an agricultural production by restock fertility of the soil. The use of fertilizer is more in nevasa 15.1% and Sangamner 10.8 %, where area under cash crops (Grapes, Sugarcane, Onion, & other Vegetables). Another said less fertilizers used thasil was Jamkhed 0.03% and pathardi 4.24 % not maximum case cropped area under agricultural land. Can be economic condition of farmer is not sound and awareness about use of fertilizer is also less.

- **Number of Electrical Pump used for irrigation in Percentage (X9):**

Used electrical pump irrigation water is potential to provide to crops within short time and according to their requirement. Therefore it is important variable in measuring agricultural development. The used of electrical pump is maximum in nevasa 14.31%, nagar11.25% and rahuri 10.78% tahsil. Other hand it is very less in akole 1.853% and Jamkhed 1.994% tahsil due to rugged topography and availability of limited irrigation facilities.

- **Percentage of Major cash crops(Grapes, Sugarcane, Onion ,& other Vegetables) (X10):**

Cash crop is a highly specialized crop grown for the purpose of earning cash income. This is very useful parameter for measuring level of agricultural development. The area under pomegranate is increasing rapidly during the last 10-15 years in the Ahmednagar district. It is very high in nevasa 21.7%, sangamner17.4% and rahuri 16.6% tahasil, and less development nagar 0.49%, shevgaon 1.35% and karjat1.99% tahsil.

Table No.01: Spatial Distribution of Agricultural Development in %

Tehsil%	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Akole	8.1	1.9	3.768	6.85037	13.7	6.55	3.846	5	1.853	2.83
Jamkhed	6.4	2	1.955	6.68419	4.49	2.66	3.846	0.03	1.994	2.25
Karjat	8.7	1.8	4.277	6.81966	5.09	3.47	1.362	4.41	8.45	1.99
Kopargaon	5.3	4.7	20.89	7.34168	1.94	42.9	9.215	7.79	3.153	9.06
Nagar	10	21	2.661	7.92692	2.74	9.19	8.814	5.79	11.25	0.49
Nevasa	11	6.1	9.714	7.19627	9.78	4.31	10.66	15.1	14.31	21.7
Parner	1.3	5.8	5.383	6.9452	19.5	4.32	8.413	4.5	6.305	6.35
Pathardi	8.2	4.2	3.367	6.84404	7.32	2.52	6.731	4.24	6.994	3.67
Rahata	4.9	8.1	9.015	7.54669	3.86	3.25	6.01	7.03	6.621	6.94
Rahuri	5.8	6.4	4.059	7.27846	3.71	2.9	8.734	9.51	10.78	16.6
Sangamner	9.5	4.9	20.88	7.28478	3.34	5.18	10.82	10.8	10.03	17.4
Shevgaon	7.5	20	10.02	6.79708	16.9	6.12	5.849	7.92	3.217	1.35
Shrigonda	9.6	5.2	0.889	6.95242	5.87	2.6	10.18	7.73	7.528	5.51
Shrirampur	3.9	7.8	3.116	7.53224	1.8	4.03	5.529	7.54	7.515	3.85

LEVEL OF AGRICULTURAL DEVELOPMENT:

The calculated level of agricultural development ten variables has been taken into account measuring. use data about above 10 indictors the co-efficient index is calculated for each tahsil which are shown in the table no.02 on the basic of co-efficient index, the agricultural development have been classify into three categories High, Medium, Low table no.03 and map no.02 indicates the classes about of agricultural development in each tahsil of the study area.

1. HIGH LEVEL DEVELOPMENT: Only one of the tahsil approached under this category in Nevasa. A lot of variables are dominated in this tahsil. These tahsil achieved high agricultural development due to well development agricultural infrastructure. It includes cross cropped area (X1),Use of fertilizers for agriculture in Percentage(X8), number of electrical pump used for irrigation (X9), major cash crops(Grapes, Sugarcane, Onion ,& other Vegetables X10), these facilities are first position on available in nevasa tahsil. And second position number of agricultural credit society(X7). Agricultural infrastructure well development in this tahsil because share 5 variables out of 10 variables, due to high level development of agricultural. These cash crops gives good come back to farmers.

Table No02: Ranking Co-efficient Index

Name of the Tahsil	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	€Rank	Co-Efficient Index
Akole	7	13	9	10	3	3	12	10	14	10	91	9.1
Jamkhed	9	12	13	14	8	12	13	14	13	11	119	11.9
Karjat	5	14	7	12	7	9	14	12	5	12	97	9.7
Kopargaon	11	10	1	4	13	1	4	5	12	4	65	6.5
Nagar	2	1	12	1	12	2	5	9	2	14	60	6
Nevasa	1	6	4	7	4	7	2	1	1	1	34	3.4
Parner	14	7	6	9	1	6	7	11	10	6	77	7.7
Pathardi	6	11	10	11	5	14	8	13	8	9	95	9.5
Rahata	12	3	5	2	9	10	9	8	9	5	72	7.2

Rahuri	10	5	8	6	10	11	6	3	3	3	65	6.5
Sangamner	4	9	2	5	11	5	1	2	4	2	45	4.5
Shevgaon	8	2	3	13	2	4	10	4	11	13	70	7
Shrigonda	3	8	14	8	6	13	3	6	6	7	74	7.4
Shrirampur	13	4	11	3	14	8	11	7	7	8	86	8.6

Source: Compiled by Author

2. MEDIUM LEVEL DEVELOPMENT: The medium level categories includes in 8 tahsils Shrirgonda,Shevgaon, Sangamner, Rahata, Rahuri, Kopargaon, Nagar, Parnar. These tahsil achieved medium agricultural development due to dominance of three to five variables of agricultural development. Main factors for medium agricultural development in these areas are increasing the area under cash crops and developing agricultural infrastructure.

3. LOW LEVEL DEVELOPMENT: This category consists of five tahsil i.e shrirampur, pathardi, karjat, Jamkhed and akole tahsil. Each tahsil is different variables position e.g shrirampur thasil irrigated area X2 second position but other variables not good positional developed. Because of pravara lift canal effects on agricultural irrigation but other agricultural elements are not good development. In the Pathardi, Karjat and Jamkhed tahsil all agricultural variables are not a good position because of these all area located in drought prone area on ahemdnagar district and akole tahsil is hilly with tribal area. This whole area has been characterized by adverse conditions like hilly, poor soils, less accessibility and low income of farmers with very less development of irrecation facilities. This all conduction effects on agricultural development.

Table No03: Level of Agricultural Development 2013-2014

Co-efficient Index	Level of development	Name of Tahsils	Number of Tahsils
0-4	High	Nevasa	01
4-8	Medium	Shrirgonda,Shevgaon, Sangamner Rahata,Rahuri,Kopargaon,Nagar,Parnar	08
Above 8	Low	Shrirampur,Pathardi,Karjat,Jamkhed,Akloe	05

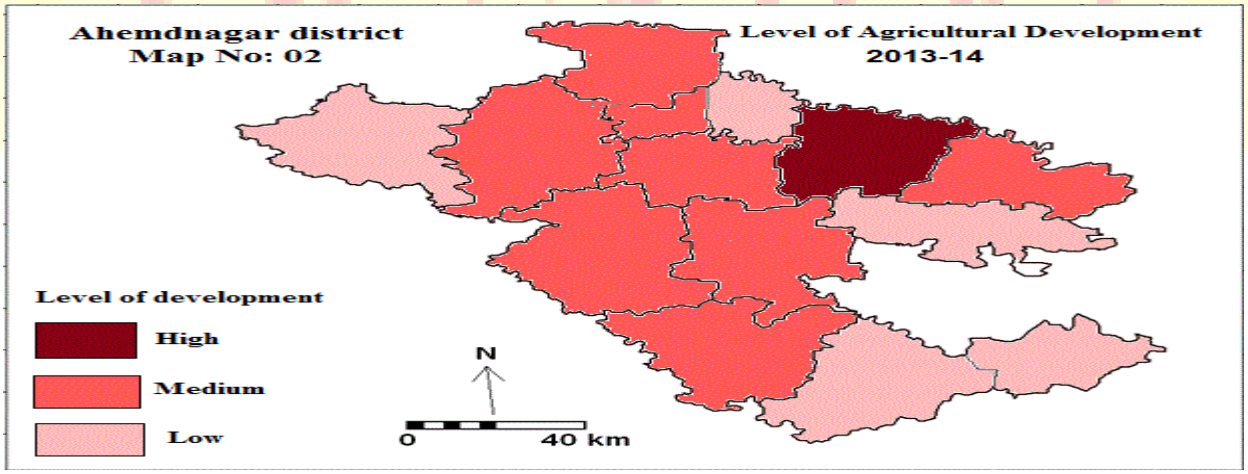
Source: Compiled by Author

CONCLUSION:

The development process in any region is the function of the interplay of five basic factors first Physical resources second degree of technology advancement third Social structure fourth Economic setups and lastly Polity.

The present study reveals that agricultural development is not well distributed in the region. The majority of the tahsils come under medium agricultural development. It is laying in the central, eastern and south part of the study area. Where physical and environmental is unfavorable and agricultural infrastructure is less development. The Nevasa is the highly developed tahsil due to enjoying the many agricultural infrastructural facilities. Low development agricultural area where making situation on agricultural e.g irrigation, agro-based industries, agro- Tourism etc. akole area good surrounding of tourism development thus large amount tourism fundamental facilities produced. It will help to increase cropping intensity of the region. Sufficient attention is necessary for market incentives especially in the medium development region. Less development region so some allied occupation of agricultural e.g animal husbandry and developed irrigation facilities. Post harvest management and marketing linkages also important for overall development of agricultural region. For this purpose crating awareness in the farmer is very vital role of government is very important in less developed. Government should promote an irrigation facilities and other agricultural infrastructure for balanced developed of agricultural of the region.

Map No 02: Level of Agricultural Development



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