Electronic Interdisciplinary International Research Journal (EIIRJ)
A Peer Reviewed Interdisciplinary Journal UGC Approved Journal No 48833
Impact Factor 5.20 ISSN 2277-8721

RURAL AGRICULTUREAND HILLY AREAS: A CASE STUDY AKOLETAHSIL IN AHMEDNAGAR DISTRICT, M.S, INDIA.

Dr. Khemnar Shivaji Bhagwan

HOD and Assistant Professor, Dept. of Geography, Agasti Arts Commerce and D.R. Science College, Akole, Tal :Akole, Dist: Ahmednagar, Savitribai Phule Pune University, M.S, India.

Abstract

Agriculture is a primary occupation of human being. It plays an important role for stable and economically sound life of human. It is a science of growing different crops from the land. In prehistoric period, human was attracted towards the rivers in search of water. They started to grow crops according to traditional ways. Now a day, the agriculture sector has become wider and developed new techniques. Agriculture is depending on water, soil, weather and such natural resources. Nature has provided various resources for agriculture. Our basic needs like food, shelter and cloth are totally depending on agriculture, man of the rural areas **a***agriculture is an important occupation for almost all the countries. Even though the developed, developing or undeveloped countries, agriculture playing a critical role for overall development. Many scholars have already devoted at large to highlight the important role and changes in agrarian sector. In historical period study of Alexander Von Humboldt, Arther Young, and Von Thunen have provided their large contributions. In India Dr. Swaminathan, Dr. Bhatiya, Prof. B. C. Vaidya, Prof. Praveen Saptarshi, Dr. Ramchandra Sable and other have focused the importance of agriculture. Depending on weather conditions, agriculture is categorized into following categories. i.e. Intensive Agriculture, Subsistence Farming, Extensive Agriculture, Plantation Agriculture and Mixed Farming. In Asian countries, there is increasing trend of population and facing limited scope of agriculture land, that's*

why they practicing subsistence Agriculture. Rice crop is taken twice or thrice in a year. Farmers are producing Sugarcane, Wheat, Soybean, Cereals, Pulses, Oil seeds, Vegetables, Fruits, Fodder, Floriculture crops etc. The region which has Monsoon rainfall with irrigation facility is popular and known for cash crop production. Small land size, large dependent population and more than 60 % of land depends on monsoon rainfall. Availability and continuous supply of water is very important for any crop. Without water, life is impossible. All living things, trees, animals, are depends on water. So use of water use should be proper. Due to globalization in 21st century there is increase in population rapidly. The demand of water for various purposes is increasing day by day.It is predicted that in upcoming 25 years, there will be extra use of water for farming or agriculture purpose. So use of water in proper way is important.

Keywords: Rural Agriculture, Hilly Areas, Crop Pattern, Modern Techniques and Land utilization.

Objectives:

1. To studyof change inRural Agricultural Area.
2. To studyof causes in Hilly Areas and change Crop Patternin the study area.

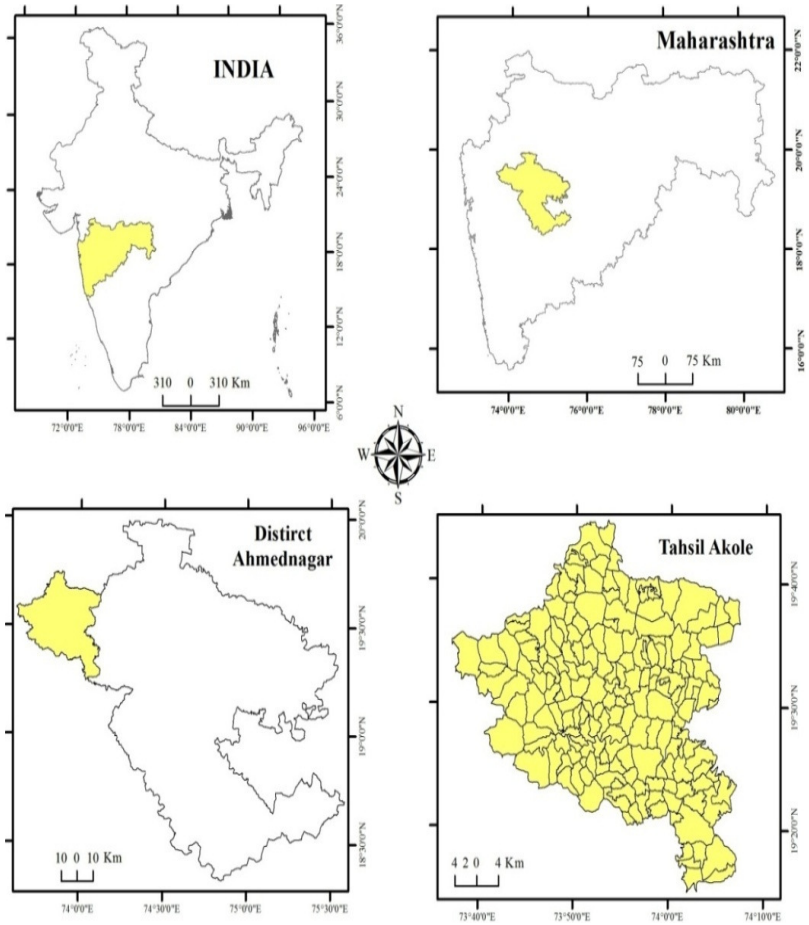
1. Introduction:

AkoleTahasil is well surrounded with the mountainous of Sahyadries. It's located at western part of Ahmednagar District, in the state of Maharashtra. In these tahasilBhandardara, Nilwande and Adhala reservoir, large number of Small tanks, minor irrigation projects or peculation tanks, Pravara, Mula, Adhala and Mahalungi are important four rivers and also covered by co-operative sugar factory, dairy milk, rice mills, banks and various co-operatives thrive here. The economy of the tahasil is driven mainly by agriculture of sugarcane, rice, horticulture, floriculture and various major cash crop of the study area.In the hilly region, climate is slightly cool. Factory making sugar from sugarcane is located at Agastinagar (Agasti S.S.K Ltd. JamgaonAkoletahasil).

2. Study Area:

The study area is well surrounded by mountains of Sahyadri, extends between **19^0 15$^{'}$ 14$^{''}$** and **19^0 44$^{'}$ 59$^{''}$** North Latitude and **73^0 37$^{'}$ 00$^{''}$**to **74^0 07$^{'}$ 24$^{''}$** East Longitudes, covering an area of **1, 50,508** hector (Map no.1). The Highest Peak of Kalsubai (5427 feet) in the Sahyadris with a mean annual rainfall of about **508.9** mm. lies in the study area. Area under forest in **41,698** hectors and agriculture land **98,712** hectors. Total Villages **191** and **4** (Four) **Revenue Circles** namely **Rajur**, **Akole**, **Samsherpur** and **Kotul**. Total population is **2, 91,950** Census **2011** (No. of Male **1, 47,880** and No. of Female **1, 44,070**), literacy **1, 92,461** persons and one of which **1,39,730** (ST) Tribal people in this area. The climate of the tahsil is hot and dry. It is characterized by a hot summer and general dryness except during the south-west monsoon season in India.

Index Map



(Map No.1)

3. Data and Methodology:

The rural agricultural and hilly areaswas prepared with the help of Secondary data and Arc GIS 10.1, Arc View 3.32 related to study area was prepared by using S O I Toposheet of 1: 50000 scale as the raster maps.

4. Results:

Ahmednagar district is famous for sugar industries. Horticulture and floriculture is well developed in the tahsil and it is mainly use of the agricultural land and converted into residential and other uses for the growth and development of the facilities. Farmers have adopt modern technology i.e. fruits and vegetables drip irrigation facility, variety seeds material, increasing use by composting biomass, improved planting technology and micro irrigation systems, crop loans, good network of transports and markets, agricultural advisory centers and also available facilities in the study area. Therefore, recently cropping pattern is change and day by day positive increased but eastern part of the study area is concentrate in the rice crop because of these areas situated in the hilly and heavy rainfall. It is observed that rice is the leading crops as is grown irrigated land. The next important crop is sugarcane another cereals, vegetable, fruit crops etc. grown by the irrigated land. It is quite interesting to note that almost all the farmers used high yielding varieties seeds of cereals and pulses. It is cultivated in 15,925 hectares of land, which accounts for 21.88% of gross cropped area. Vegetable is the next crop which is cultivated in 11,283 hectares recurring 15.50 % of total cropped area. While the bajra, flower crops, wheat, soya been, pulses, jawar and maize, cotton, oilseeds, sugarcane, fodder crops and fruit crops are 14.63, 8.95, 8.63, 6.33, 5.04, 5.74, 4.11, 3.05, 2.57, 1.82 and 1.69 % of the total area under different crops that varies in different villages.

a. Changes of Land utilization:

A change in the land utilization implies a change in the proportion of area under different crops at two different times. As such the amount of area involved in change for the study area is calculated for individual crops and the crops of leading increase

and decreased are marked. The intensity of land utilization is reflected in number of crops raised during the year. Among the various determinants of agriculture, it is assumed that irrigation positively affects the intensity of cropping. The study area has recorded different parts of the eastern side's significant increase in residential and agricultural area due to which gained more land from water bodies, barren and vacant lands. It is clear from the study that the land utilization and cropping pattern is mostly increasing the recent year. Shows the four circles (Akole, Kotul, Rajur and Samsherpur) Scenario on Land utilization in follows (Table No. 1):We have classified it into **eight** categories. They are dense vegetation (forest), sparse vegetation (forest), shrubs or low vegetation (forest), agricultural land, barren land, shadow land, settlement and water bodies.

Sr.No	**Classification**	**Area in %**		**Value of Change (%)**
		2001	**2013**	**2001 to 2013**
1	Dense Forest	2.18	12.11	**+9.92**
2	Sparse Forest	3.69	5.54	**+1.86**
3	Shrubs or Low Forest	37.46	19.29	**-18.18**
4	Agricultural Land	8.12	22.61	**+14.49**
5	Barren Land	44.05	35.00	**-9.05**
6	Shadow Land	0.27	0.27	**0.00**
7	Settlement	2.81	3.22	**+0.41**
8	Water Bodies	1.42	1.96	**+0.55**

Table No. 1 (Source: Satellite Data 2001 and 2013)

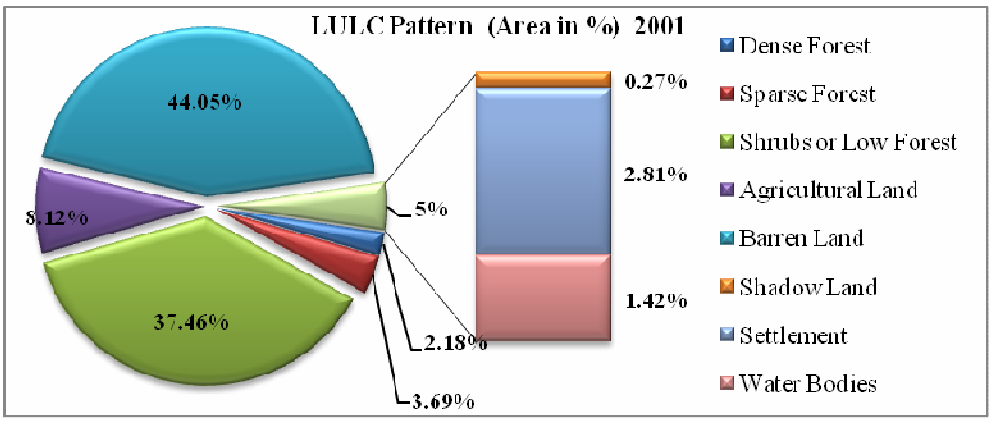


Fig. No. 1 (I): **LULC Pattern (Area in %) 2001**

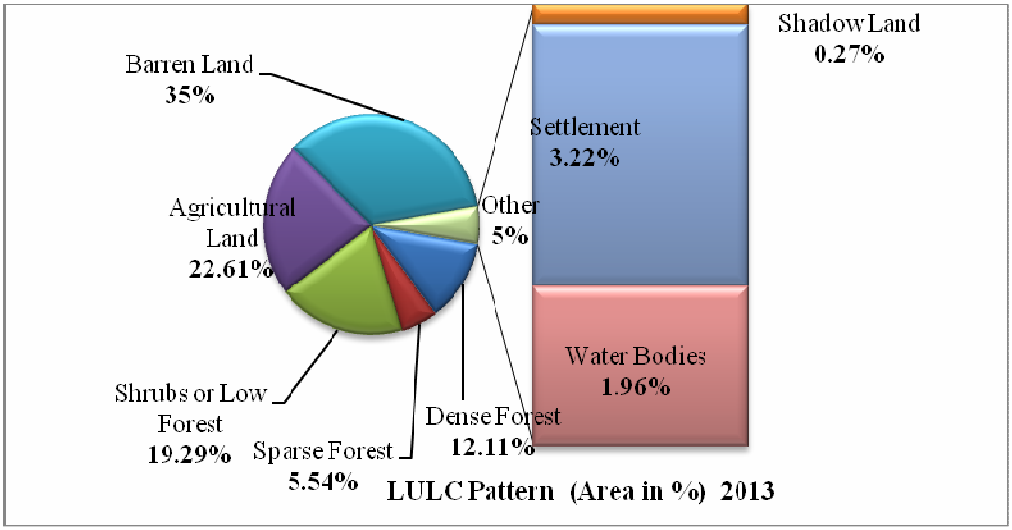


Fig. No.1 (II): **LULC Pattern (Area in %) 2013**

b. Modern Techniques and Land utilization:

In the study area farmers have adopt modern technology i.e. fruits and vegetables drip irrigation facility, variety seeds material, sugarcane, increasing use by composting biomass in crop cultivation, improved planting technology, machineries and micro irrigation systems, available for nearby village inputs, agricultural labour, bullock power, crop loans, electricity, irrigation, dairy centers and processing units, nearby sugar factory, agricultural advisory centers and also available facilities in the study area. The major portion of the land is under cultivation is positive changed. Significant change is noted that in cropping pattern. The shift from rice, cereals, pulses, groundnut and sugarcane coincides with the irrigation developments in all

villages. Moreover the land tendency ownership of land, size of holdings and size of fields also impose restrictions on the cropping pattern of a regionin the study area of small holdings, the farmers tend to be subsistent despite innovation diffusion. The total geographical area of the tahsil is 1, 49,942.43 hectares, out of which about 92,922.63 hectares area is under cultivation. Wilson (Bhandardara dam), Nilwande (Upper Pravara project II) dam situated onpravara river, Adhala dam (medium) situated inAdhala river, another small and medium size surfaces reservoirs are very important role in agricultural activities.The increasing need for economic development of this particular region is expected to be met through the extension and intensification of the agricultural activities.

5. Conclusion:

It was observed the study area, about 80 percent population depends directly upon land middle and eastern part of the study area. The agricultural land converted into residential and other uses for the growth and development of the facilitiesIt's also covered by co-operative sugar factory, dairy milk, rice mills, banks and various co-operatives thrive here. The cropping pattern of a region is closely influenced by the geo-climatic, socio-cultural, economic, historical and political factors. Moreover the land tendency ownership of land, size of holdings and size of fields also impose restrictions on the cropping pattern of a regionin the study area of small holdings, the farmers tend to be subsistent despite innovation diffusion. Pravara, Mula, Adhala and Mahalungi are important rivers, rises in different places of the study area. Wilson dam (Bhandardara - Pravara river), Nilwande dam (Upper Pravara project II - Pravara river), Adhala dam, another small and medium size surfaces reservoirs and K.T. Weirs situated in the study area. The canal surface water distribution system consists of 182 km (2328 hectares irrigated area) of canal systems i.e: upper pravara project (Nilwande) higher step of right and left pipe canal system.These are very important play role in agricultural activities.Increases in the use of tractors, electric pumps and oil engines, energy in general and inanimate energy also largely

influenced by the disparities in the status of irrigation in the study area. Favorable government policies regarding loans and subsidies, changing attitude of the farmers and impetus given by the co-operative societies and co-operative sugar factories are also contributing their due share in the adoption of improved machineries.

6. References:

1. Dept. of Agricultural and Revenue circle information in Talathi Office, akoleTahasil.
2. Dr. KhemnarShivaji B.and Tupe B.K (2014): 'Development of Land utilizes: Summarize in AkoleTahsil (Ahmednagar District), M.S, India', International Journal of Science and Research (IJSR),Volume 3 and Issue 10.
3. Dr. Mhaske P.H and Tupe B.K (2014): 'Available of Physical and Environmental Conditions effect on Rice Crop: A Case Study of AkoleTahasil (M.S, India)',International Journal of Environmental Research, P.V.P,Mahavidyalaya, Pravaranagar.
4. Dr. Mhaske P.H and Tupe B.K (2014): 'Demands of Changes in Cropping Pattern: A Case Study of AkoleTahasil (M.S, India)', International Journal of Science and Research (IJSR), Volume 3 and Issue 5, 1314-19.
5. Dr. Wagh S. R. and Tupe B.K (2013):'A Micro level study of agricultural modern techniques and changing cropping pattern in AkoleTahasil of A.nagar dist.(MS)', Natural Resources Management and Sustainable Development, ASC College Parner, India, ISBN: 978-81-926129-8-0 (P.p 174-77).
6. Dr. Wagh S. R.,Tupe B.K andKadamVaishali (2014): 'Shifting Scenario of Land utilizes Outline in AkoleTahsil (Ahmednagar District), M.S, India'.University recognized Conference, ASC Col. Parner, ISBNNo. 978-81-129754-8-0.
7. Handbook of Agricultural (2011): Indian Council of Agricultural Research (Sixth Edition Revised), Directorate of Knowledge Management in Agriculture ICAR, New Delhi.Jasbir

8. B. K Tupe (2009): 'The Changing Cropping Pattern - A Case Study of RahataTaluka in Ahmednagar district', UnpublishedM.Phil Dissertation, Submitted to Tilak Maharashtra Vidyapeeth, Pune, M. S, India, (P.p 35-37).
9. Dhainkaur (1991): 'Changing Patterns of Agricultural Landuse (A spatial Analysis of Bist Doab Punjab)', Rawat Publications, New Delhi, (P.p.166).
10. Dr. B. C. Vaidya (1997): 'Agricultural Land use in India, A Study in Yashoda Basin', Manek Publication Pvt. Ltd, New Delhi.
11. B. K Tupe (2014): 'Land use and Cropping Pattern Changes: A Case Study of AkoleTahasil in Ahmednagar District M.S)', Unpublished P.hD Thesis, Submitted to SavitribaiPhule University, Pune, M. S, India.