

## **Agricultural area and Food Nutrition in Akole tehsil, Ahmednagar District of Maharashtra State, India**

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### **Abstract: s**

Agriculture is the sector best placed to affect food production and consumption of nutritious foods needed for healthy and active lives. Various factors affect the production of agriculture and the total area of agriculture, mainly geographical, socio-economic and technical factors. There is a very close relationship between area under cultivation and Food nutrients, which means that areas with higher agricultural production and area should have higher levels of Food nutrients, in other words, higher yields. The nutritional status of people in such areas is higher depending on the socio-economic status of the people. This research paper is based on secondary data which is collected from Agriculture Department in Akole Tehsil.

**Key words:** Food Nutrition, Agricultural area, Akole tehsil, Resources

### **Introduction:**

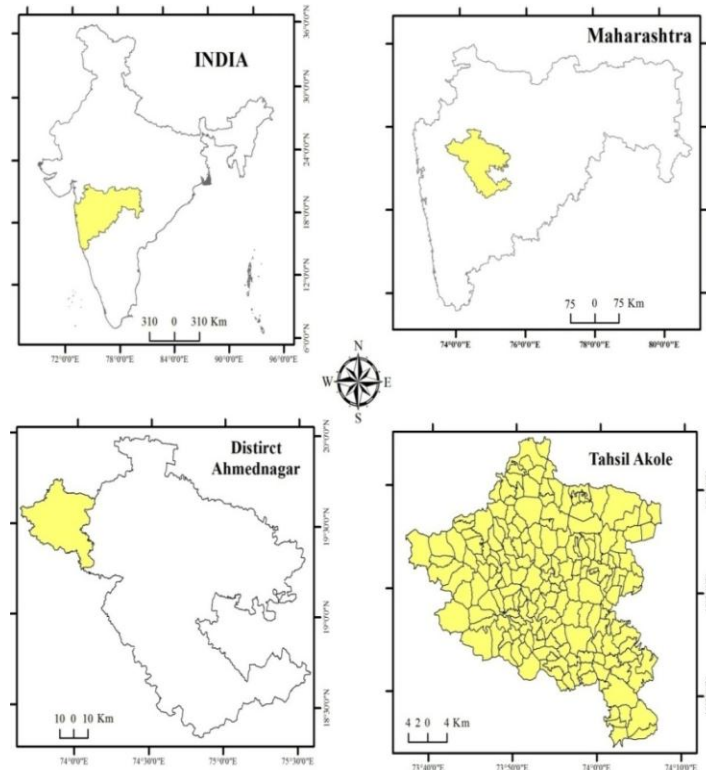
Agriculture is affected by various factors such as geography, socio-economic and technology. In modern times, the nature and scope of agriculture is changing because of the change in new techniques, in short, modernization. The availability of food grains depends on the total area under cultivation and the diversity of crops in that geographical area. It depends on the production of food grains. Human health depends on the availability of food. As much as the lack of food grains, the lack of nutrition for health. And health is not good, on the other hand where there is abundance of food grains in an area, a large amount of nutrition is obtained and health is maintained there. On the one hand, health and nutrition also depends on the economic status of the family, if the economic situation is not good, it affects the available food and nutrition. In short, the type of agriculture available in a geographical region is closely related to the total area under that type of agriculture and food production and nutrition.

- **Food** can be defined as anything solid or liquid which when swallowed, digested and assimilated in the body provides it with essential substances called nutrients and keeps it well. It is the basic necessity of life. Food supplies energy, enables growth and repair of tissues and organs. It also protects the body from disease and regulates body functions.
- **Nutrition** is defined as the science of foods, nutrients and other substances they contain; and of their actions within the body including ingestion, digestion, absorption, metabolism and excretion. While this summarizes the physiological dimensions, nutrition has social, psychological and economic dimensions too.
- **Nutrients** are the constituents in food that must be supplied to the body in suitable amounts. These include carbohydrates, proteins, fats, minerals, vitamins, water and fibre. We need a wide range of nutrients to keep ourselves healthy. Most foods contain more than one nutrient such as milk has proteins, fats, etc. Nutrients can be classified as macronutrients and micronutrients on the basis of the required quantity to be consumed by us every day.

#### **STUDY AREA:**

Akole is a Tehsil place in Ahmednagar district of Maharashtra state. It is well surrounded with the mountains of Sahyadris. Its latitudinal extent is between  $19^{\circ} 15' 14''$  North to  $19^{\circ} 44' 59''$  North and longitudinal extent is from  $73^{\circ} 37' 00''$  East to  $74^{\circ} 07' 24''$  East. It is surrounded by Sangamner tehsil is west, to the east Thane district, to the north by Nashik district and to the south pune district. Total Villages are 191 and 4 (Four) Revenue Circles namely Rajur, Akole, Samsherpur and Kotul. Total Geographical area of tehsil is 1, 49,990.31 hector. The study area occupies 8.73 percent areas of the district respectively and area under the forest is 41,698 hectors. Agriculture land is 98,712 hectors. The climate of the tehsil is hot and dry. It is characterized by a hot summer and generally dry except during the south-west monsoon season and average rainfall is 508.9mm per year. However, in the study area consists of two zones namely the Transition Zone (receiving 700-1250 mm rainfall) and Hilly Zone (receiving 1250-3250 mm rainfall). Except study area, the entire Ahmednagar district falls under drought-prone area.

Map no 01: Location Map



**Aims and Objective:** The main aims of the said research is to study the area under agriculture and food nutrition in Akole tehsil. Along with this, the objectives for the said research paper have been taken in the following.

1. To study various crops of Akole tehsil
2. To study the total area under crop in Akole Tehsil (1991 to 2011 census periods)

**Methodology:**

The entire data of the said research is dependent on secondary data. The Agriculture data taken for the statistics department of Agriculture Office in Akole Tehsil, and various subject websites have also been used. At the same time, the agricultural area in the said period has been converted into a percentage and its bar graph divided circle has been prepared. In short, various cartography methods have also been used. An attempt has been made to show the total crops grown in Akole Tehsil and the nutrition they can provide, have attempted to study.

Table 01: The five food groups and Nutrients Supplied

Sr. No	Food group	Main Nutrients Supplied
01	A) Cereals, Grains and Products Rice, Wheat, Ragi, Bajra, Maize, Jowar, Barley, Rice flakes, Wheat flour	Energy, protein, Invisible fat, Vitamin – B1, Vitamin – B2, Folic Acid, Iron, Fibre
02	B) Pulses and Legumes Bengal gram, Black gram, Green gram, Red gram, Lentil (whole as well as dals) Cowpea, Peas, Rajmah, Soyabeans, Beans	Energy, Protein, Invisible fat, Vitamin – B1, Vitamin – B2, Folic Acid, Calcium, Iron, Fibre.
03	C) Milk, Meat and Products Milk Milk, Curd, Skimmed milk, Cheese, Meat Chicken, Liver, Fish, Egg, Meat.	Protein, Fat, Vitamin – B12, Calcium., Protein, Fat, Vitamin – B2
04	D) Fruits and Vegetables Fruits Mango, Guava, Tomato Ripe, Papaya, Orange. Sweet Lime, Watermelon. Vegetables (Green Leafy) Amaranth, Spinach, Drumstick leaves, Coriander leaves, Mustard leaves, Fenugreek leaves. Other Vegetables Carrots, Brinjal, Ladies finger, Capsicum, Beans, Onion, Drumstick, Cauliflower	Carotenoids, Vitamin – C, Fibre.  Invisible Fats, Carotenoids, Vitamin – B2. Folic Acid, Calcium, Iron, Fibre.  Carotenoids, Folic Acid, Calcium, Fibre
05	Fats and Sugars Fats Butter, Ghee, Hydrogenated oils, Cooking oils like Groundnut, Mustard, Coconut. Sugars Sugar, Jaggery	Energy, Fat, Essential Fatty Acids
Source: Gopalan, C., Rama, Sastri, B.V. & Balasubramanian, S.C. (1989). Nutritive value of Indian foods. Hyderabad. National Institute of Nutrition, ICMR <a href="https://ncert.nic.in/textbook/pdf/kehe103.pdf">https://ncert.nic.in/textbook/pdf/kehe103.pdf</a>		

### Distribution of major crops:

In table number one, it is mentioned which form of nutrition is obtained from which crop. This means that we can see the close relationship between agricultural production and various crops and food nutrition. An attempt has been made to show the total crops grown in Akole Tehsil and the nutrition they can provide, have attempted to study. Distribution of irrigated land among different crops kharip crops i.e. rice, bajra, Soya been, Other Oilseeds, Cotton, Sugarcane, Jowar and maize as well as rabbi crops i.e. wheat, other cereals, Jowar and maize, pulses, sugarcane etc. are important crops grown with the help of ground water. It is observed that rice is the leading crop as is grown in 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 are using high yielding varieties seeds of cereals and pulses. Along with farm yard manure the chemical fertilizer like D.A.P., Urea, Super Phosphate and Potash are used. Pesticides and insecticides are also applied to protect the crops from pests and diseases. But the quantity of applying chemical fertilizers is less than recommended doses. Traditional methods are followed for sowing, weeding and harvesting crops. A few farmers used threshers.

**Table 02: Crops Group**

Sr.No	Crops Group	Particular
1	Rice Crops	Kharip
2	Bajra	Kharip Cereals
3	Wheat	Rabbi Cereals
4	Other Cereals	Jowar , maize etc.
5	Pulses	Tur, mug, math, gram etc.
6	Soya been	Kharip Oilseeds
7	Other Oilseeds	Groundnuts, kardai, jawas, sunflower etc.
8	Cotton	Kharip Cash crop
9	Sugarcane	Kharip/Rabbi Cash crop
10	Fruit Crops	Guava, Chikku, grapes, pomegranate, papaya, sweet lime,

		coconut, orange, mangoes, etc.
11	Vegetable Crops	Onion, cabbage, chilly, cauliflower, brinjal, tomato, methi, leafy vegetable, ridge guard, garlic, coriander seeds etc.
12	Flower Crops	Rose, Camomile, Jasmine, Marigold, Mogra etc.
13	Fodder Crops	Grass and etc.

(Source: Agriculture Dept. Akole Tehsil)

Above table no 02 include, all major crops divided into total 13 major crops categories have been included in the study area. The crop categories are rice, bajra, wheat, other cereals, total pulses, soya been, other oilseeds, cotton, sugarcane, total fruit, vegetable, flower and fodder crops.

### Major crops with Area during 2011:

Various kinds of following crops are cultivated in the tehsil. The total actual cropped area is 72768 hectares during 2010-11.

Table 03: **Total Crops with area during 2011**

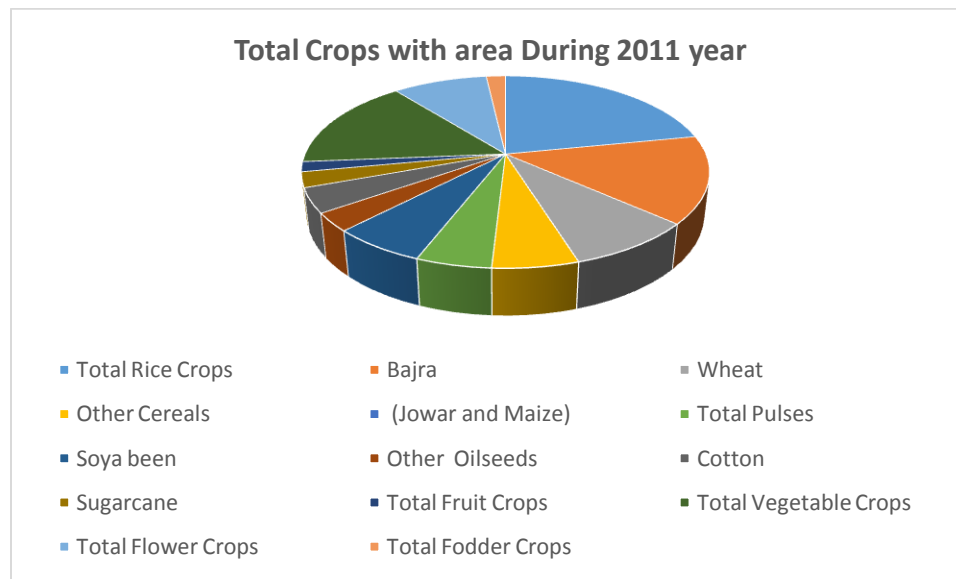
Sr. No.	Total Crops	2010-11 (Area in hectares)	Area in %
1	Total Rice Crops	15925	21.88
2	Bajra	10646	14.63
3	Wheat	6286	8.63
4	Other Cereals (Jowar and Maize)	4180	5.74
5	Total Pulses	3672	5.04
6	Soya been	4607	6.33
7	Other Oilseeds	2226	3.05
8	Cotton	2997	4.11
9	Sugarcane	1873	2.57
10	Total Fruit Crops	1234	1.69
11	Total Vegetable Crops	11283	15.50
12	Total Flower Crops	6513	8.95
13	Total Fodder Crops	1326	1.82
<b>Total</b>		<b>72,768</b>	<b>100</b>

(Source: Agriculture Dept. Akole Tehsil)

Table no. 1 and 2 and Fig. no. 1 and 2 that rice is the dominant crop in the tehsil. 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, Jowar-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 respectively.

**Graph number 02: Total Crops with area during 2011 census years**



### Temporal analysis of crops area:

Table No. 4 shows the area under various crops in Akole tehsil. Which shows that total paddy area is higher in Akole tehsil. According to the census of 1991, the total area under rice cultivation in Akole tehsil was 14493 Hectares, but according to the census of 2011, it has increased to 15925 Hectares, which means that the area under paddy is increasing years to years. In short, the growth in the area of other crops is also seen, those crops are as follows. Wheat, Jowar and Maize, Pulses, Soya been, Other Oilseeds, Cotton, sugarcane, Flower Crops, Fodder Crops, On the other hand, there is a deficiency in some crop areas, in short, there is a decrease in some crop areas e.g. Bajra ,Fruit Crops, Vegetable Crops. Graph number 02 shows the total area under crop according to census it can be seen that the area is decreasing in 1990-91 but the area

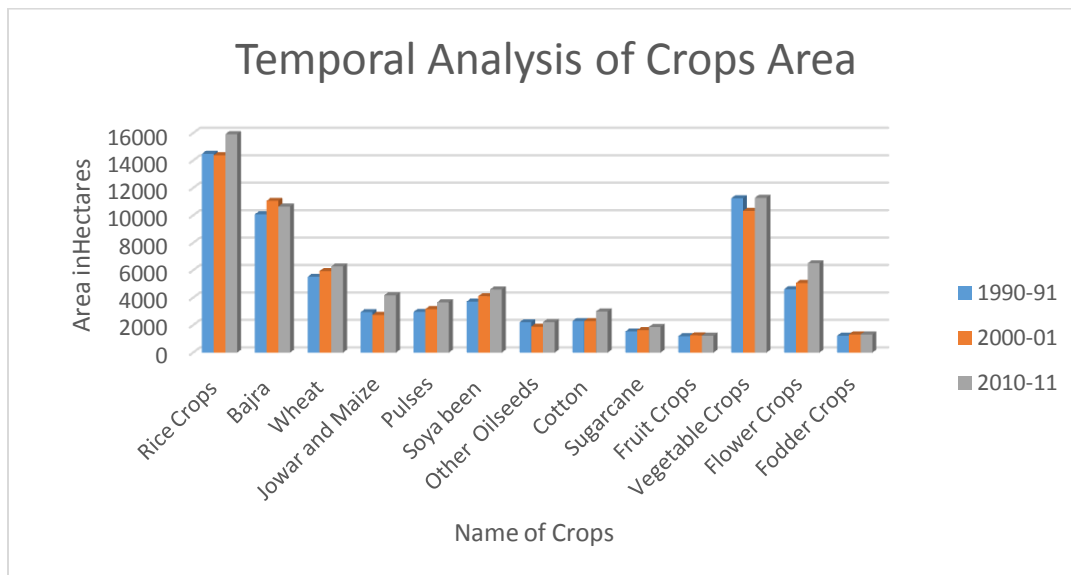
is increasing in the year 2011, it is clear that the total area under crop in Akole tehsil is showing an increase in the area under cultivation.

Table 04: Temporal analysis of crops area

Sr. No.	Name of Crops (Hectares)	Census year		
		1990-91	2000-01	2010-11
1	Rice Crops	14493	14388	15925
2	Bajra	10082	11064	10646
3	Wheat	5530	5943	6286
4	Jowar and Maize	2951	2750	4180
5	Pulses	2969	3176	3672
6	Soya been	3724	4114	4607
7	Other Oilseeds	2212	1891	2226
8	Cotton	2300	2303	2997
9	Sugarcane	1541	1639	1873
10	Fruit Crops	1195	1257	1234
11	Vegetable Crops	11248	10330	11283
12	Flower Crops	4623	5077	6513
13	Fodder Crops	1230	1320	1326
<b>Total</b>		<b>64,098</b>	<b>65,252</b>	<b>72,768</b>

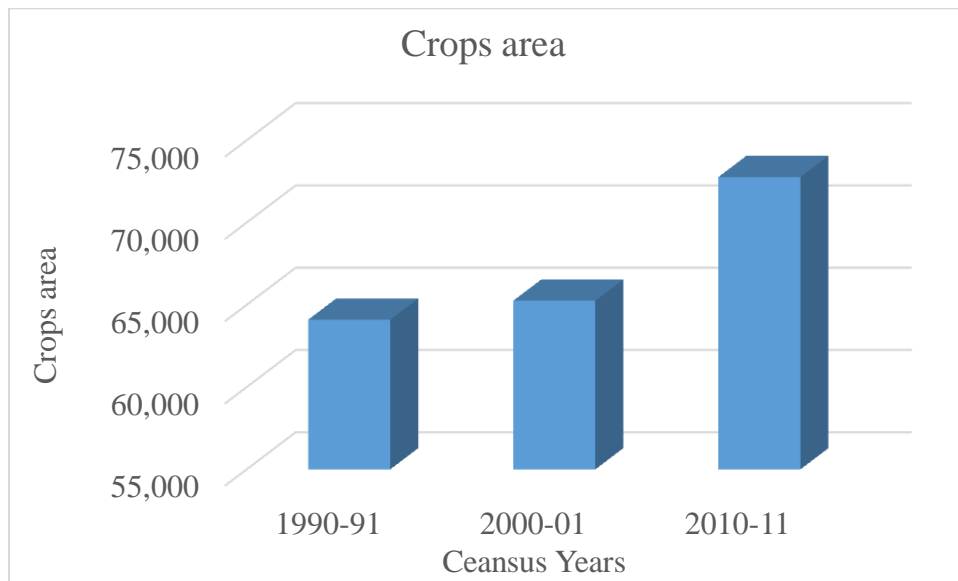
(Source: Agriculture Dept. Akole Tehsil)

Graph number 02: Temporal analysis of crops area





Graph number 02: Temporal analysis of crops area (During 1990-91 to 2010-11 Periods)



### Conclusion:

Agriculture is the sector best placed to affect food production and consumption of nutritious foods needed for healthy and active lives. In Akole tehsil, the area under crop is increasing, mainly rice crop is considered as the most important crop followed by various crops like jowar sugarcane, this positive increase is observed, and on the contrary negative increase is observed in bajra crop. Positive growth of crops area is Wheat, Jowar and Maize, Pulses, Soya been, Other Oilseeds, Cotton, sugarcane, Flower Crops, Fodder Crops. There is a decrease in some crop areas e.g. Bajra, Fruit Crops, Vegetable Crops.

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