CHAPTER II

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2.0 Introduction

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The studies in agricultural geography including land use, cropping pattern and agricultural productivity are in India and abroad. However, for the spatial analysis of agricultural technology in south east part of Pune district, the various kind of literature has been referred. Agricultural technology is an interdisciplinary study. Besides geographers, it has been studied by economists, agronomists, irrigation engineers, sociologists, planners, administrators and so on. The geographical studies on agricultural technology are very few as compared to the studies done on land use, cropping pattern, agricultural productivity, irrigation etc.

To study the geographical analysis of Changing Agricultural Technology in Indapur Tahasil of Pune District of Maharashtra the present research work has been selected. There are so many authors who study the agricultural technology and also concluded their conclusion. Some of the research articles are used in review.

2.1 Review of Literature

According to Er. Sharma Neha and Er. Singh Sukhjit (2012), “Conventional flood-type methods consume a large amount of water, but the area between crop rows remains dry and receives moisture only from the incidental rainfall whereas the drip irrigation technique slowly applies a small amount of water to the plant’s root zone. So by using the fuzzy based algorithm in wireless sensor drip irrigation technique, we can control the wastage of water and secondly by using wireless sensor, there is no need of laborers.”

Tank irrigation is important to the rural poor in south India. It reduces the risk of drought in rainy season and it provides an opportunity for cultivation in the dry season. For vulnerable people strongly dependent on agriculture and the vagaries of the weather, assured water for cultivation is extremely important and tank irrigation may furnish such assurance. Tanks are, however not merely a way of providing irrigation for fields, but
have also constituted a significant part of social and political life. The irrigation commission of 1901 noted that tanks were the life of the people. (Dikshit G. S. and et. al. 1993)

According to (Rathod et. al., 2009) agricultural production is influenced by physical, socio-economic, technological and organization factor, an endeavor is made here to study the crop combination region in Yavatmal district the crop data has been computed with the help of Doi’s methods of crop combination. The study region covers 13582 sq.km (4.4%) of the state and a population of the 2077144 (2.63%) of the state in 1991 census Yavatmal district.

Along with the modern technology which should be utilized in agriculture the market and transport facilities plays also vital role in the development of agriculture. The supply of electricity and connectivity to each settlement through road networking is sufficient in the Tahasil, but the facilities regarding agro services centre, agricultural market and cold storages are inadequate in study area (Gatade, 2012). Dhule and Nandurbar districts of Khandesh region of Maharashtra their agricultural modernization for production increase has become all the more important as the scope for increasing land under agriculture is very low (Patil and et. al., 2007).

Singh J. and Dhillon (2000) stated that agriculture modernization implies technological as well as organization improvement. Therefore modernization is a process where there are increasing modern inputs in farming and maximizing yield levels. This shows a variation over space through time.

N. N. Firake and (et. al., 2012) revealed that the drip irrigation scheduled daily at 0.60 per cent evaporation and the soluble fertilizers applied weekly at 80 per cent of recommended dose to Gerbera under polayhouse conditions resulted into maximum benefit: cost ratio of 1.59 over other treatments under study.

Sunil Kumar (and et. al., 2012), found that long term effect of organic materials. Along with fertilizers increased the soil organic carbon, saturated hydraulic conductivity, available N.P.K. grain and straw yield of wheat and decreased the soil bulk density, soluble salt, concentration and PH. long term integrated nutrient management by applying organic manures and inorganic fertilizers has potential for improving the soil
physical and chemical fertility status for increasing the crop yield for sustainable agriculture.

Rajbirsingh (and et.al, 2009) indicated that drip irrigation at 80% ET (Evapo-transpiration) with Polyethylene much resulted in significantly highest yield water use efficiency and maximum benefit: cost ratio in tomato. Drip irrigation system is a very effective and efficient method of irrigation for raising tomato crop especially on light texture sandy loam soil.

Magare P.Y and Suryawanshi D.S (2010) concluded that irrigation is the major input in the agricultural practices. It improves the cropping intensity and practices. Where there the irrigation intensity is higher there is the higher cropping intensity and lower the net sown area. Kumbhar, T.E (2011), concluded that the area under the scheme required regular and adequate supply of water. The farmer has to be take decision of use of modern methods of irrigation like drip sprinkler and diffuser etc.

The high level of performance is largely confined to karad, phaltan and patantahsils. This zone has been characterized by assured supply of water mainly from lift and canal irrigation, sugarcane cultivation, dominance of cash crop etc., As result of this zone possesses high level of agricultural performance (Shinde and et al, 2011)

Singh J. (2005) used the approach to determine the levels of mechanization of India. The approach to determine the levels of mechanization of India Along with the modern technology which should be utilized in agriculture the market and transport facilities and connectivity is sufficient in the tahsil.

Majid Husain (2002) stated that “Green Revolution” is a term coined to describe the emergence and diffusion of new seed of cereals. The new cereals were the product of research work and concentrated plant breeding with the objective of creating high yielding varieties of rice, lick -8 (miracle rice), at the International rice research Institute, Philippines in the 1960s. The increase in yield from the new seed has been spectacular. In some cases the yield of HYV is more than double the yield of traditional varieties.

Hangaragi, S.S. (2011) concluded that cropping pattern of the district has not changed significantly in spite of population growth. In the present scenario needs to strengthen the irrigation facilities, soil and moisture conservation, adoption of biotechnology, aorestation, changing in the cropping pattern, agronomic practices, livestock
development, rural communications, development of medium, small and marginal farmers and agricultural laborers and setting up agro-based industries. The dry land development programme, sericulture and small scale industries at village level should be setup through the various programs of agricultural development.

Suresh Phule and Abhijeet Bodade (2003) stated that Marathwada with western Maharashtra in the sense of agricultural development it is supposed to be very low developed due to lack of irrigational facilities. The farmers are choosing the verity of crop combination in their fields.

According to (D.K.Majumdar, 2004), water is the basic need of plants for metabolic and production processes within. A crop is grown in different land situations, soil types, climatic conditions, seasons and water supply situations. Besides, crops differ in their structures and habits. Their water requirements thus vary widely. Various methods are adapted to irrigate crops and the main aim is to store water in the effective root zone. Uniformly and in maximum quantity has to possible ensuring water losses to the minimum. Different methods are classified by majumdar. These are surface irrigation, subsurface or sub irrigation, overhead or sprinkler irrigation, drip irrigation.

According to Dr. Ratnadeep Bane and Prof. H. N. Kamble (2012), Modern age is the age of advancement in several fields of human activity. Modern agricultural implements are relatively better than the farmer ones in respect of comparative high returns from the given file. The scientific methodology in spite of its increased inputs has the effects of increased output giving desired margin of profit to the farmers. Hyv’s of cotton could have been a sole reason for its extinction from the “kanam” (cotton) region of Gujarat.

According to Andeshahana N.J. and Khunt K.A. (2011), the factor determining the use of fertilizers needs to be critically analyzed to narrow the gap in nutrient supply capacity of soil and nutrient requirement of the plant for sustainable productivity of the crops. They also mention that in their study the gap between actual use and recommended doses of fertilizer and to identify the factors determining the fertilizer use in major crops grown in the study region. They also reveal that the gap in respect of use of N was observed in all the selected crops but increase of P. The gap was observed only in Bajra crop.
Irrigation is an agricultural strategy designed to reduce moisture deficiency for example, the imbalance between the moisture supplied by rainfall and evaporation demand. Moreover, the adverse results of unreliability of rainfall are well encountered through irrigation. Irrigation intensity means net irrigated area percentage of net sown area. The intensity of irrigation is not uniform in any agricultural region. Irrigation is controlled by various factors such as source of irrigation, quality and quantity of water supply, density of network of channel, cropping season, types of crops grown etc. The irrigation is a major input for agricultural production. Where irrigation facility is adequate there are maximum the cropping intensity are found. Cropping intensity refers to the practice of raising more than once crop from the same field during one agricultural year. In technical terms it can define as representing the percentage of gross cropped area to the net sown area. (Magare, P.Y and Suryawanshi, D.S, 2010)

Agricultural land is the basic natural resource. It forms the basic for all biological, ecological economical and human activities. Land is an important input in agricultural sector but the yield of agricultural crops mainly depend upon fertility of land for raising different crops, cropping pattern is the central element of agricultural land use. (TupeBabasaheb K. and et.al, 2010)

Santu Sangar (2005) concludes that the irrigation plays a significant role in the agricultural development. The Drip irrigation has many advantages. He attempts to understanding social, economic changes in the life of farmers in Niphad tahsil brought about by drip irrigation. The drip irrigation has resulted into an increase in the yield of grapes. The farmers are growing grapes, pomegranate and other fruits also. Consequently the economic condition of farmer is improved.

According to the Dasgupta (1989) adoption of modern agricultural innovation is supposed to be panacea for raising production and productivity. They include new and improved inputs, improved cultural practices and improved methods and practices of farm management and marketing.

Agricultural innovations have been brought to the rural areas. Undoubtedly, the use of these modern inputs presents direct and positive relationship with the productivity,
but they could not be adopted by all classes of the farmers and there is wide variation in their utilization. It is because adoption is not neutral to the social structure and is influence by the personal, social and economic characteristics of farmers as well as by the physical environment. Variation in these attributes of these farmers causes variation in level of adoption of innovations. This variation has several dimensions – spatial, temporal and societal also has repercussion on productivity (Farmer B.H., 1979) and (Sharma S.K. 1992).

Modern agriculture is highly dependent on irrigation. Even the use of Hyv and fertilizers are directly related with the extent of irrigation. It raises the crop productivity even without the use of Hyvs. (Sharma, S.K. 2003)
References


Ibid…………Pp- 40-41.


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