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1. INTRODUCTION :

Agriculture occupies a most vital place in India's economy. Nearly 70 percent of people in India depend directly or indirectly for their living on agriculture. At present India is in the process of social, economic and political transformation. As the population increase food output has to increase, and this inroles increasing the productivity of land. For the productivity to increase the peasants have to find and accept new farm techniques or innovations.

The development of agriculture depends on its technological change. The use of fertilizer, improved seeds, improved irrigation facilities, new agricultural implements are some of modern means in this regard. To extend the fruits of technological development to the maximum number of farmers the process of diffusion and adoption of agricultural innovations must be accelerated.

Agricultural innovations are vital components of rural development. Indian farmers can increase the production to a considerable extent by adopting most of the agricultural innovations, if they are made available with adequate and assured infra-structural facilities. Improved tools and machinery are some of the important inputs in modern agriculture. A shift from tradition oriented farm operations towards mechanization is a evident of tractor.

Keeping in view these facts the present study deals with the diffusion of agricultural innovations in Walwa tahsil. In this work an attempts have been made in the direction of adoption of improved implements particularly a 'Tractor' for agricultural practices in the study region.

2. REVIEW OF THE LITERATURE :

The nature and process of diffusion of the agricultural innovations have been studied by geographers for several decades. After the mid of twenteenth century the study of spatial diffusion have been emerged in the field of cultural geography. In geography many scholars like Griliches (1957), Moore (1966), Mayfield (1967), Morill and Pitts (1967), Ramchandra (1973) and Mohammad (1976) have studied the nature and process of diffusion. The fundamental work of Hagerstrand on Monte-Carlo Simulation Model of spatial diffusion (1952, 57) served as basis for large number of studies. In this direction an attempt have been made by Starfield et al.,(1965); Roy et al.,(1968); Mohammad and Majid (1979).

The regional level attempts have been made by Onkar Singh and S.P.Maurya for Chakia Development Block, Varanashi (1984). Noor Mohammad for Ghagra Plain (1978), Rana P.B. Singh for Sabaran Plain (1975), Anjaya Vyas, C.Thangvel for Karjan Command area (1983) and Kanawade (1984) for Kolhapur

district. A review of these studies indicates that the number of diffusion studies conducted by geographers has increased rapidly during this period and it is in the context of cultural and regional attempt.

3. CHOICE OF THE REGION AND TOPIC :

The choice of the area under study is a result of many considerations such as i) It is a home region to which researcher is rightly familier, ii) Walwa tahsil occupying the western part of Sangli district is one of the most fertile and well watered agricultural area of the district, iii) The increasing facilities of irrigation has influenced the adoption of tractors by peasants in this area, iv) The river Krishna and Warana provide fertile and productive land and v) The tahsil is fastly developing part of district and the increase in land under cash crops has influenced the adoption of tractor to a considerable extent. All these consideration have influenced the study namely " Diffusion of Agricultural Innovations in Walwa Tahsil of Sangli District."

4. OBJECTIVES OF STUDY :

Walwa tahsil is one of the agriculturally developing part of the district. The tahsil is predominently a rural one with 89 villages. Krishna and Warana are life lines of tahsil and irrigate 21.21% of total cropped area of the tahsil.

Increasing irrigation facilities along with adoption of new technology have shifted the cropping pattern from subsistence to commercial one in some parts. In particular, sugarcane is emerging wherever the technological inputs are made available thereby giving a rise to sugar factories, a growth points in the study region. In view of the above in the present work an attempts are made to study the diffusion process and diffusion pattern in study area. However, taking into consideration the time limit adoption of only tractor has been selected. The objectives of study are as follow.

i) To study the agricultural framework as a basis for adoption of agricultural innovations in tahsil.

ii) To study spatio-temporal growth of tractors in the region.

iii) To study the socio-economic status of the peasants as a carrier and barrier in diffusion process.

iv) To apply Hagerstrand's model for understanding diffusion pattern of tractors in study region.

5. SOURCE OF DATA AND METHODOLOGY :

As it is a micro-level investigation most of the data used in this study are collected empirically. The information regarding the characteristics of farmers and their aspect were collected by filling the schedules for which 100 respondent are interviewed from 20 percent villages selected by stratified

purposive random sampling method. The 30 points detail schedule was prepared to study socio-economic status of farmers. The data regarding general landuse, implements, different crop land, sources of irrigation was collected by circulating the questionnaire to each village officials. The statistics regarding demographic and agricultural aspects have been obtained from district census handbook, socio-economic abstract and district gazetteers of Sangli district. The data pertaining to tractor owner were collected from Regional Transport Office, Sangli.

The data collected through primary and secondary sources were processed and presented in the tables, graph and maps. The Chi-square test, Pearson's correlation co-efficient, and significant test of correlation co-efficient 't' are used to test various hypothesis, which are formulated regarding the adoption score of tractor and different socio-economic status of the peasants. Hagerstrand's Realistic and Simulated Models based on Monte Carlo technique have been used to study the purpose of distributional pattern over space through various time intervals.

6. DESIGN OF THE WORK :

The entire work has been divided into six chapters. Chapter I, deals with the regional structure. It include the analysis of relief, climate, soil, population, electricity and

transport facilities. Chapter II deals with agricultural set-up and it includes general landuse, irrigation, cropping pattern, and agricultural implements. Chapter III attempts to highlight on the trend of diffusion. Chapter IV deals with detailed analysis of socio-economic status of the farmers. An attempt is made to develop a Diffusion Model in Chapter V. The last chapter is devoted to summarize the findings.

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