1. Introduction:-

India is basically an Agricultural oriented country the role of agricultural is very vast as it is the most important enterprise in Indian economy. Agriculture is a very broad term encompassing all aspects of crop production, livestock farming, fisheries and forestry. Performance of agriculture plays a major role in the progress of the economy. It helps in achieving the developmental goals of eradication of poverty and modernization of society. Agriculture sector is the backbone of the country’s developmental and life line for 70 percent of the population is still dependent on Agriculture for their live. Agriculture provides food to the millions of people and raw material to our industry. The development of Agriculture seem to hold the key progress to our economy as a whole, it is therefore necessary that it should as a receive due emphasis (Jalap M.L. 1987).

Agriculture has no single and simple origin it was started in different periods. Present day Agriculture in India as elsewhere has evolved itself through the ages. The Agriculture in India has long been carried out in a traditional manner, hardly using the modern techniques in the developed parts. However, during the last three decades special attention has been paid to modernize the Agriculture with adoption of different technologies, since the mid sixties, great change has taken place in Agricultural technology. These changes have been designated by the term “green revolution”.

The term green revolution refers to the renovation of Agricultural practices beginning in Mexico in the 1940s. The beginning of the green revolution are often attributed to Norman Borlaug, an American scientist interested in Mexico and developed new disease resistance high yield varieties of wheat. Due to the success of the green revolution in Mexico, its technologies spread worldwide in the 1950 & 1960 in order to continue using green revolution technologies to produce more food for a growing population worldwide. The scholars of various disciplines have attempted to define agricultural technology. According to Raj V. T. (1982) has defined the term new or modern technology as “forms of new form inputs practices and services, such as HYV of crops, chemical fertilizers, insecticides, herbicides, irrigation, improved form machines and equipment etc.” Lekhi R. K. (1984) modern technology in agriculture comprises the use of HYV’s intensive use of improved implements, more appropriate use of inorganic fertilizers,
mechanization and greater use of irrigation facilities. Jugle V. B. (1987) has explained that agro–
technical progress is the one that increase the agricultural productivity of both qualitative and
quantitative in the same proportion.

In fact, it is not the entire list of various technologies, which occur in agriculture during
the process of agricultural development. Moreover, in the present study the changes that occur in
the channels of marketing of agriculture produce and changes that occurred in the processing of
agricultural produce have not been considered.

Agricultural technology has a long history. Its process of development was initiated as a
long history. Its the nature. In the pre-industrial world, agricultural technology evolved itself
through several phases. In the most primitive cultivation, in was connected with a digging stick,
which is further followed by fallow system in the later stage. Moreover, pre-industrial
civilization was connected with the plough. (Ester Boserup, 1965)

Generation of Agricultural surplus was the main driving force behind human civilization.
At present, agricultural technology requires external impulses from the industrial sector in
getting supplies of technological inputs on the one hand and the demand from the sector for
agricultural products, on the other. (P. Franks, 1984)

India is the only country in the world with all types of soils and climatic conditions
suitable for growing variety of crop. therefore various cropping patterns are found in the
technical factors are changeable in nature availability of new Agricultural input such as high
yielding varieties of hybrid seeds, Agricultural implements, machinery, chemical fertilizers,
pesticides, irrigation technique etc. have brought about changes in the cropping pattern. it is true
that there should be change in agriculture for its progress and development. Agricultural
production depends on the advanced technology. consequently, farmers are encouraged to bring
more land under high value crops. in order to maximize the output, the farmers have used various
modern inputs. the use high yielding varieties of seeds for example is resulted into substantial
increase in the level of output
Generally, the agricultural technology consists of different techniques, methods, devices, innovations improved implements, other inputs used by farmers in using these technologies is to enhance agricultural production.

From mid-sixties a great change has taken place in agricultural technology in India. The new agricultural technology consist of bio-chemical and mechanical innovations. As a part of bio-chemical technology, there has been increase in adoption of high yielding varieties for five major cereal crops like wheat, Rice, Maize, Jawar and Bajara etc. and use of chemical fertilizer and pesticides. Further as the part of mechanical technology modern machineries like tractors, harvesters, electric pumps, plant protection equipment etc. have been expanding on an increasing scale.

The physical environment like physiography, Climate, Soil and Water imposes limits on the growth and distribution of plants and animals. The role of man in the cultivation of certain crops in a region is also quite important with the advantage of green agriculture sector. Man by his technological advancement, can ameliorate the physical limits. The cultivation of rice in Punjab, Haryana and Rajasthan testifies this fact, Irrigated areas of Punjab and Haryana received benefits of such technology. There was gradual diffusion of agricultural technology in other states of the country. After 1960, in Maharasthra favourable policies of the state government strengthened co-operative sector, which encouraged the establishment of sugar industry in later period. These agro-industries played important role in the process of diffusion of new technology in agriculture to obtain maximum yields per unit area. Similarly, the farmers become conversant with these technologies as they intended to increase their production. By this time the proportion of literacy, among the farmers was also increased due to which they learnt modern technology in agriculture. The supply of improved implements, High yielding varieties of seeds, fertilizer, Pesticides was made available by co-operative sectors. Besides may irrigation projects were completed and extension of rural electrification stimulated lift irrigation and fertile flood plains of rivers observed drastic change in crop land use. The financial assistance to farmers to purchase different inputs was made by co-operative banks. Consequently the fruits of these efforts were seen after mid-seventies largely in the state.

The study area covers basins of the river Bhima and its tributaries. Introduction of agricultural technology was initiated in this river basins. The farmer of the study area are aware
about the agricultural technology and try to maximize their production. However, there is regional disparity in the distribution of agriculture technology in the region. Geographical investigation of agricultural technology in the present work deals with the spatio-temporal variation, growth trends of different technologies of agriculture adopted by farmers. Because of agricultural geographer’s main concern is with regional variation in the distribution of agricultural entities and the causes of variations (Singh Jasbir, 1994) An assessment of the impact of these technologies on agricultural productivity is also attempted.

The geographical investigation of agricultural technology in Indapur Tahasil of Pune District is undertaken here for following reasons-

1) Apart from the development aspects, the ignorance and negligence on the part of farmers, towards the use of new technology in agriculture, have given rise to some problems due to which the production level is adversely affected. Geographical investigation of such negative impacts on agriculture is necessary in the present context.

2) In view of growing population, vertical extension of agriculture is inevitable as horizontal extent has already been ceased in the region. The concern of agricultural geographer is with the study of the levels of agricultural performance and its relationship with the levels of agricultural technology. This kind of approach would be helpful to adopt proper strategy in agricultural planning.

3) The agricultural sector has witnessed drastic changes during the last three decades. The use of agricultural technology has brought about considerable changes in cropland use along with the upward trend in production level of various crops. The task of geographer is to examine and analyse these changes which is attempted in the present work.

4) Recently, the farmers have become alert about new innovations to introduce in agriculture. Such changing attitude of farmers has led to increase the rate of adoption of new technology by which agricultural landscape has been favourably influenced. The role of agricultural geographers is also to assess the impact of technology on agriculture.