CONCLUSION

The British capture of Surat Castle by 1759 opened new episode in the writing of the history of Gujarat. Broach annexation in 1772 started an era of the formation of new pockets which emerged as British Gujarat. Over the period, the British rule was established in the five districts namely Broach, Surat, Ahmedabad, Kaira and Panch Mahals are understood as British Gujarat territory. For administrative convenience, it was marked under the control of the Northern Division of the Bombay Presidency.

Every region is blessed with natural resources and human agencies are known for their systematic exploitation. India as a country and Gujarat region in particular was known for judicious use of knowledge popularly known as 'traditional knowledge system'. The study of this thesis is based on the discussion related to mode of production of agrarian and non-agrarian produce and manufactures in the Gujarat region before the arrival of the British; its interaction with the 'introduced European technology'; social needs of the natives; and the emergence of British Gujarat as a symbiosis identity by accommodating and adjusting with each other.

We have discussed in Chapter Two that pre-colonial agricultural environment was vibrant. The cultivators are reported to grow different varieties of food and cash crops. References drawn from various primary sources do bear the testimony to the potentiality of the sub-regions of Gujarat; the skills of the peasants; knowledge about seasons; crop pattern; &c. The natives also knew about the enhancement of yield and maintenance of fertility of the soil through usage of manures and practice of crop rotation. It is also reported that even peasants cultivated three crops in a year. Since our study is based on interaction with the British in Gujarat, it is well understood that cash crops like cotton, indigo, sugarcane tobacco, etc., are discussed at length. The dissertation discusses the European merchants who were known to roam into the different sub-regions of Gujarat to procure commodities based on cash crops as these were known for quality which was highly acknowledged in the Indian Ocean trading centres. The tools and implements employed in agriculture equally enabled the cultivators to grow abundant crops, to control the growth of weeds and, further, to check the attacks of insects and pests. The plough, seed drill and other implements

used were products of antiquity. These tools were used at length by the cultivators to grow variation of food and cash crops. The British Gujarat tools and implement as observed were based on the proper knowledge of soil, environment, ecology and the judicious use of water bodies. The agriculture is further associated by animal husbandry. Gujarat was known for good quality of cattle. The natives were also known for the breeding management and control of cattle's diseases.

Non-agrarian situation in pre-colonial Gujarat further makes the sub-regions prosperous. The textiles made from cotton with traditional methods were highly recognised and dyeing was considered mastery. The instruments used in the manufacture of cloth were skill oriented and best option for the purpose. Gujarat was known as the land of cotton cultivation and its finished products was the reason for the entry of the European merchants into the various locations of Gujarat. Ahmedabad and other centres in British Gujarat were known for hand-made paper which was known for its whiteness. Leather products were made on traditional methods and finished products attracted markets. Iron, wood carving, glass work, etc., were other sectors which further strengthened non-agrarian potentiality of Gujarat. Vessels manufactured in Gujarat were pronounced of best quality and techniques employed in its manufacture are better in comparison to the European methods. Thus, we can establish an assumption that agrarian and non-agrarian sectors in pre-colonial Gujarat were vibrant, dynamic and based on sound knowledge system.

The legacy of pre-colonial agrarian and non-agrarian set up which evolved since antiquity created an environment for the Britishers to experiment, introduce science and technology in order to successfully exploit Gujarat agrarian sector to fulfill the commercial demands generated in the wake of Industrial Revolution in England.

The establishment of the British rule in Gujarat is largely guided by the commercial demand. The commercial motive of the British government can be better observed in case of cash crops which were largely promoted. Unfortunately, food crops received little attention of the British government. Cotton enjoyed maximum

efforts and exotic seed variety were tried in British Gujarat sub-regions to obtain long staples cotton, as native cotton comprised of short staple. Introduction of foreign seeds led to failure in absence of adequate knowledge of local geography and climatic condition. In the next phase, they were convinced of the superiority of local cotton staples and with experts help experimented to obtain desired results. Natives also actively participated in the introduction of exotic seeds, but were forced to abandon as the outputs and quality of cotton was not satisfactory. By the end of the 20th century, an era started with systematic establishment of experimental farms with experts and sufficient budget led to the evolution of number of cotton staples. Besides, cultivation of improved cotton staples, measures were taken from the government to control the insects and pests which proved an essential knowledge and it received favourable response from the cultivators.

The government tried to increase the silk production and experiments were conducted. But the result was not satisfactory. The environment was not favourable in Gujarat for silk production. Even natives initiatives were not very promising.

Indigo which enjoyed its reputation in pre-colonial era showed the declining pattern. The discovery of cheap artificial dye and emergence of the Bengal Presidency as the chief indigo supplier region changed the indigo cultivation scenario in Gujarat.

Sugarcane received attention of both the natives and the British government. Both government and natives responded for the introduction of exotic canes. But the classic example comes from Baroda State. Diwan T. Madhavrao hired experts from the northern India for sugar manufacture. Maharaja Sayajirao Gaekwad III tried to industrialise the sugar manufacture and established miles. Unfortunately, the initiative for sugar manufacture was not promosing. The discussion on sugar manufacture shows that nature of soil and climate is very important and one cannot expect quick result in short time span.

In case of tobacco, exotic seeds were tried in *Charotar* region of Kaira District. The results were not encouraging and British government was forced to

acknowledge the superiority of local staples. They also realised their limited efforts made in this direction and over the period, experimental farm was opened which enabled growth of new cotton staples. Natives were participating in the improvement of tobacco staples and late Rao Bahadur Sardar Bechardas Desai of Nadiad was instrumental in this regard.

The British authority was impressed with the natural skills of the natives to monitor the soil fertility. The crop rotation; mixed cropping pattern and use of animal dung practiced by the cultivators enriched the fertility of the soil. The government introduced artificial chemical manures in order to increased yield of the crops. But it did not receive the attention of the natives because of its harmful effects and requirement of surplus water. The case shows the utility of the native's skills to maintain the soil fertility. The shifting cultivation was also acknowledged by the colonisers.

In the similar fashion, native's tools and implements showed its superiority. The British attempt to introduce imported tools received limited acceptance among the natives. Iron plough introduced in Gujarat was rejected because soil in Gujarat required only light ploughing. The judicious use of seed drill and other implements continued to enjoy the confidence of the cultivators. In case of sugar manufacture, iron sugar mill found some acceptance, but still, the traditional sugar crusher made of wood is used.

In the field of irrigation, the traditional use of drawing water from wells, tanks, reservoir, etc., continued. The traditional water lifting devices were still employed in agriculture. To increase the yield of crops, the British tried to introduce canal irrigation but the nature of rivers and topography of the sub-regions forced the government to abandon the initiative. The next significant step taken by the government was the introduction of water pumps. But it registered limited response because of its high cost and need of frequent repairs.

Gujarat is known for best quality of cattle breeds. Natives showed their skills about the cattle disease control, its breeding and sound knowledge about the feeding

of animals. The government opened animal farms by the end of the 19th century did some beneficiary results. Improved breeds developed in these farms were given to the natives for the improvement of cattle stock. In the study, it is shown that natives also participated in the adoption of improvement provided by the government. In terms of manufacture of milk, butter, ghee, etc., the government was convinced with the superiority of the native's skills.

The limited response in the agrarian sectors achieved by the government is a complex issue and commercialisation is not the complete answer for this. The nature of soil, geography climate and the subsistence form of Gujarat's agriculture is the vital elements which cannot be easily manipulated. The British government wanted quick results in short span of time with limited expenditure would definitely give results with little success. But they at least tried to introduce changes in agriculture. The natives were already practicing sound agricultural skills, and therefore, there were hardly significant changes in agriculture. The first phase of agricultural experiments gave number of insights to the government and serious efforts made by the end of the 19th century. Various experimental farms with experts were established in each districts of British Gujarat began to change the face of agriculture. The first half of the 20th century showed steady improvement in the staples of various crops; disease control; manure utilisation; trials with imported tools and instrument and improved cattle stock. The British government introduced agricultural experiments by institutionalising the research by establishing experiments farms. This was a novelty. They also implemented agricultural education in British Gujarat and syllabus was framed in such a manner to benefit the natives.

The non-agrarian sector in contrast shows significant transformation. The traditional mode of manufacture of cotton silk, woollen fabrics received changes introduced by the government. The other sectors like wood, ivory carving, hand-made paper, stone and pottery work showed the sign of decline. Manufacture of cotton cloth received maximum attention owing to the demand of Industrial Revolution. Cotton gin was introduced to clean cotton from seeds. It received limited response from the natives because staples were damaged by the gins. Native

instrument '*charkha*' enjoyed wider acceptability and was well suited to the local cotton staples. For the manufacture of cotton cloths, traditional handloom was used by the natives. Though the quality of cloth was good, the output remained time consuming. The government introduced looms which over the period find some response in urban sub-regions of British Gujarat. The introduced devices are further benefited with the introduction of electricity in the first half of the 20th century. Some of the natives happily accepted the power looms. But still traditional loom was able to give stiff competition to machine made cloths. The natives showed keen interest in the introduction of the establishment of mills. In case of Ahmedabad, Ranchhodlal Chhotlalal without any monetary and technical support from the government established mill at his own efforts. Not only this, he and other luminaries started *Swadeshi Ugoyag Vardhak Mandali* (1875) to spread technical information to the peoples about the usefulness of the mills. The case shows that natives were active participant to the imported technology on their own when there is no support coming from the government.

Gujarat region was not known for silk rearing and it was procured from outside. But the varieties of cloth made from it enjoyed reputation in the markets. No mills were established in British Gujarat to manufacture cloth made from silk by the government because of natural barrier.

The traditional work based on gold and silver on cloths known as *jari* continued to enjoy its continuity among the artisans. The British government were convinced of its utility and J. K. Kapadia was send to Europe to study this art.

The cloths were dyed with natural colours and this industry was known for good quality of dyes. The introduction of artificial dye and decline of indigo cultivation led to the lesser use of these dyes.

The woollen industry and carpet making continued to be made on traditional methods and received scant responses by the government. Salt and saltpetre were manufactured with existing procedure. The British introduced some innovation but

result was not encouraging. Owing to the bias among certain communities, saltpetre was not manufactured on a large scale.

Wood carving, ivory works, stone work, pottery, further got limited patronage from the government. Though, these industries continued to survive but were on the declining phase. Kapadvanj in Kaira District was the only centre known for glass manufacturing. The introduction of cheap European made glass articles proved detrimental to this traditional industry. Ranchhodlal Chhotalal from Ahmedabad started manufacturing glass items and he hired a skilled European to give competition to imported articles. This case shows that natives were able to give competition on their own efforts without any help from the government.

Iron manufacture receiveed attention of the British government and they introduced certain modifications to manufacture iron. But still its impact remained limited and Gujarat sub-regions continued with the traditional method of iron making. The impact was felt more in urban areas, which continued to be influenced by the British government rule.

Leather industry followed the traditional pattern and Gujarat sub-regions are reported to manufacture leather products using existing natives methods then employed. The government tried to introduce advance chrome tanning, but again, it received scant attention of the people and natives continued with traditional methods.

Ahmedabad was known for hand-made paper. The British government was not satisfied with the quality of paper and decided to introduce paper manufacturing mills. The natives readily accepted the machine made paper and sub-regions were reported to have mills worked on steam power. One such case is of Ahmedabad, where a mill was established by Jama Ludin Mahammmadbhai in 1877.

Liquor was prepared from *mahua* and toddy plants. Its traditional use had beneficial benefit against diseases. To increase the manufacture of liquor, government invited experts from the Bengal Presidency. Government introduced Distillery Act, 1878 and distilleries were opened in British Gujarat and were

followed by the princely states of South Gujarat. The British policy enabled the Parsis to venture into the fields and certain varieties of liquor became famous. Largely, liquors were made on traditional pattern.

For oil extraction, natives used traditional instrument '*ghani*'. The British introduced European machines to prepare oil from the oilseeds. In this case, natives generally did not adopt the introduction of foreign machine as the taste of oil was found bitter. But this does not mean that natives totally rejected the imported technology. The British Government districts registerd the opening of oil making industry equipped with the European machinery established by the natives.

In the field of navigation, the indigenously made vessels were pronounced superior to the European made ships. The Indian method of 'rabbeting' was adopted in the manufacture of vessels to be used by the government. The British Government introduced steam powered ships which was better in comparison to indigenously made vessels in terms of carrying cargoes. But still in small coastal regions, the country made vessels were largely used for navigational purposes.

The British introduction of imported technology had significant impact in urban areas but in rest of the sub-regions, the people continued with the traditional mode of production. Up to the end of the 19th century, the transformation was limited and society registered slow acceptability. The beginning of the 20th century documents rapid changes in both the agrarian and non-agrarian sectors. The transformation is a complex process and one should be careful while analysing the role of the government and the natives. Government in number of times tried to introduce perfection but owing to the natural set-up and existing social structures, the initiatives received limited achievements. In many cases, their policies also led to the decline of certain traditional manufacturing sectors. The natives participated in the adoption / rejection of the imported technology as per its utility in the local society. They happily adopt and implemented foreign technology if it had utility and in the reach of their financial capacity.