ABSTRACT

One of the most debatable topics of modern studies in Indian history is that of the level which the technology, craft, economy and society of the subcontinent had achieved in their evolution by the end of pre-colonial and the beginning of colonial era. The importance of this question needs no special explanation. To find an answer means to get the keys of so many enigmas and to form a more clear understanding of India's past, present and future. This is, no doubt, a complex problem which implies the analysis of economic development, social structure, the state and its functions, ideology, ethnic identities, religions, culture, etc. All these aspects are significant: the neglect of some of them or the exaggerated attention to another may distort the whole picture. Whether a scholar agrees with the "basis-superstructure" model or not, the research into socio-economic field will be of topmost priority.

The majority of works on this subject discuss the agrarian sphere of pre-colonial Indian economy, the development of agricultural techniques, economic relations, social institutions and other sides of rural society as well as the state policies as concerned the peasants. Such an approach is fully justified by the fact that in all pre-modern societies, India being no exception, agriculture was the predominant field of economy and the occupation of the absolute majority of people. A number of Indian scholars, along with their colleagues from other countries, have made valuable contribution to the agrarian history of India.

However, given the predominance of the agrarian sphere of economy, the industrial one was likewise of vital necessity. Non-agricultural production was widely spread in the countryside also, but its gradual concentration in the cities, the growth of urban sector in scope and significance was one of the major premises for socio-economic progress. The work hereby presented to the readers is supposed to discuss the evolution of urban industries in pre-modern India: the productive forces, the forms of economic organization and social institutions pertaining to the life and work of medieval craftsmen, their relations with the state and the nobility as well as their socio-psychological profile. The author has no special purpose to undertake a detailed study of rural crafts, but where necessary some features of the latter and their development vis-a-vis their urban counterparts are to be discussed. It has become common knowledge that urban industries of the Middle Ages were almost everywhere characterized by some kind of guild or corporate organization and labor division not as much within a given technological process, but more between the guilds/corporations. Productive forces developed through the centuries and centuries on the base of manual labor which
survived for quite a long period even in the modern times. Nevertheless it was
the quantitative and qualitative changes in manual technologies along with the
organizational and social development that facilitated the early modern leap to
machine-based production. We may here bring to the readers' mind a well-
known statement by Marx that "it is not the articles made, but how they are
made, and by what instruments, that enables us to distinguish different
economic epochs." At the same time it has to be noted that the improvement of
tools and techniques is not necessarily congruent with the development of
production relations, nor does (he former automatically influence the latter.
Some instruments have come from remote antiquity to modernity with no
major changes in shape and functions. Hence it would be wrong to study the
history of production with no reference to man and to society. The history of
manufactures is thus not only the record of technological changes, but the
history of people involved in these activities in the concrete civilisational
surroundings, as well as of social relations and institutions pertaining to the
sphere of production.

As far as urban industries of medieval India are concerned, the
majority of works on this matter analyze mainly economic organization, social
structure, relations with commercial capital and such like aspects. Some of
these publications are to be cited and commented upon in the present book.
However the study and estimation of technological development and productive
forces as a whole are anything but easy due to the scarcity of adequate source
material. This fact has been acknowledged by nearly all scholars engaged in the
research into the non-agricultural sphere of medieval economy. Nevertheless
the deficiency of reliable data has not prevented some historians from
categorical statements on the techniques of medieval Indian crafts as archaic,
stagnant and primitive. According to some scholars, to name first Professor
Irian Habib, these features are even more visible in comparison with the
technological development of medieval Europe and China, viewed as the never-
ending flow of improvements and progress.

This problem is of acute significance for the study of pre-colonial
Indian society. It is also related to a wider question of what medieval period
has given to Indian civilization. Was it a dark age of technological primitivism,
feudal oppression and obscurantism or an epoch of harmony, great
achievements in technological aspects and giving status to artisans?

The present study is therefore finally based on the following:

- By observation
- Use of internal records related to crafts
- Use of external records like publications of government, semi-government and
  other organizations like universities, NG0's and public bodies.
- Use of Historical documents ,books and gazetteers, Manuscripts etc
- Occasional Field surveys
The core of this method is something contrary to the manner in which comparisons are generally being made. People compare things and as a result arrive at the conclusion that one is different from the other, one is more useful, advanced, beautiful, etc.; than the other. But in the above-described case the result is known long before the comparison is undertaken: "after all, who conquered whom?" The West represents progressive model of development, innovations, changes, evolution and revolution, while India is (for the Middle Ages, at least) backward, stagnant and archaic, non-adaptive to technological, economic and social novelties. In some studies, as if to make the comparison more unequal, for Europe a result is taken (like the mature forms of manufactory, putting-out system, etc., that developed throughout, the centuries and passed through many transitional forms) and juxtaposed with a certain process (or some randomly selected stage of it) in India. The result of such a method is not difficult to foretell: "stagnant" or "stagnation" are the key words for everything Indian of the pre-modern (pre-colonial) times, and to spare the readers of any doubts, these definitions are included even in the title of the books.

Such an approach makes the very comparison senseless: why should we waste time on it when a result is already known? A historian may be hereby equated with a lazy but crafty schoolchild who, being unable to solve an arithmetical problem, peeps at the end of his book where he finds the right answer and then adjusts the solution to it. The knowledge of the result does not, in our opinion, necessarily imply the correct understanding of the process leading to it.

Apart from the variety of developmental models, Western societies were distinguished by different tempos and paradigms of historical evolution. A fourteenth or fifteenth century European would have been very much surprised by hearing from a modern scholar, in case such a conversation were possible, that Britain was destined to lead the world industrial development and not Italy, the great workshop and stock exchange of the Middle Ages, the place where technological innovation reached the greatest heights and first manufactories were established; he would have been likewise astounded to know the sad plight of Italy in the seventeenth and especially eighteenth centuries. Similarly our present knowledge of the breakthrough made by some (only some) European countries on the eve of modernity should be no obstacle for an objective, equality-based and unprejudiced comparative study.

**ESSENTIAL STEPS IN DESIGNING A RESEARCH**

Social research is becoming increasingly an important activity and more importantly the interdisciplinary approach has become latest trend in reaching out to some conclusion... It is extremely important for the agency which wants to undertake any research to understand the basic research procedures. The knowledge about the basic rudiments of careful and systematic inquiry is very
essential for undertaking any research.

There are a number of steps or closely related activities involved in research. All these steps follow a prescribed sequence. However, all the steps need not follow a rigid sequence but may overlap as well. The steps in research are also very much interdependent. One step determines the nature of another. Every step of the research process is so wide that separate chapters can be written on them. However, in the present write up a very brief account of the steps is given.

Formulation of the problem

Formulation of the problem is one of the very important steps in research. We have to put a great deal of thought into the formulation of our questions if we hope to get anything out of an effort to answer them. In order to solve the problem, it has first to be carefully formulated. The more carefully the problem is formulated the more satisfactory is the solution we obtain. Before formulating a problem we have to first determine what a ‘problem’ is. Before considering the questions of research design the problem must be defined. The problem should be as clearly defined as it should give guidance in the construction of research design. By allowing design considerations to influence problem definition, the researcher tends to limit his choice to those problems about which objective data can be readily obtained. Hence, we find that formulation of the problem is a very essential step of research.

(i) Specifying Objectives of the Theme

The objectives of the survey must be clearly spelt out. This very important and helps in achieving and measuring the results. Both general as well as specific objectives of the survey must be clearly defined. The objectives make it clear as to why we are conducting the research and what we are trying to get out of it. Where do we look for the objectives and how do we go about formulating them? In general there are three sources to take into account before formulating objectives; these are (1) the research consumer, (2) the researcher, and (3) those that will be affected by use of the research results. All pertinent objectives are not compatible. Some conflict of interests is always to be expected. It is therefore necessary to know which objectives are the most important in order to know how to evaluate any potential solution to the problem. The objectives however should be simple and clear. They should be framed in a simple language.

(ii) Selecting an Area for exploration and study

The particular area where the survey is to be undertaken must be carefully chosen. Great care should be taken before choosing an area. Many important factors such as importance, feasibility, its use to community, organisation etc., must be taken into consideration.
Deciding the Nature and Scope of Work

Yet another essential step of research is the decision as to what is going to be the nature and scope of the survey. The decision about the type of survey will also depend upon its purpose. There are different types of studies. Broadly the surveys can be classified by (i) purpose and (ii) approach used. Surveys of foreign technology may be divided into several types according to purpose and scope and according to where and when interviews take place.

The surveys may not however, be classified according to some precise or rigid system. What is important is that they should be well designed and carefully done, whatever type they may be. It is also important that specific nature of the survey should be determined early particularly when time and resources available are limited.

Selecting Methods and Techniques

Great care is to be taken in the selection of methods and techniques of data collection. The findings of the survey will greatly depend on how scientifically methods have been selected. The methods by which data is to be collected or obtained must be devised after the problem has been formulated. Techniques are to be devised for collection of information. There are various methods of data collection namely interviewing, observation, questionnaires, projective techniques, examination of records, etc. All these methods have advantages and limitations. Selection of a particular type of method will also depend upon the type of survey for which data is to be collected.

Data Collection

Data are all the relevant materials, past and present, serving as basis for study and analysis. The data must be carefully collected. Care should be taken to see that it is collected honestly and consistently. The data should be free from errors. It should be seen that the interviews are honest and the data collected is unbiased. As data is being collected it should be checked for completeness, comprehensibility and reliability. Such checking will prevent difficulty at later stages when data is being arranged. Also care should be taken to see that the timing of data collection suit the convenience of the respondent.

Analysis of Data

The collection of data however is only one step, an important step in research. The data collected is to be analyzed for meaningful interpretation. The amount of data collected may be huge and extremely varied. This has to be systematically arranged. The process of analysis includes: editing, classification and coding (placing each item in the appropriate category) and tabulating
(counting the number of items in each category) and statistical computations. In order to save time at the later stages, it is necessary that the analysis be planned in detail before actual work on it is started. A simple basic outline of analysis should be prepared in advance.

(vii) Interpretation of Data

The data analyzed is to be meaningfully interpreted. The interpretation of findings is inter-related with the analysis. Both are involved in the writing of survey report. Interpretation takes the results of analysis, makes inferences pertinent to the research questions studied, and draws conclusions about these questions. Interpretation of data should be done very carefully. Results of the survey greatly depend on this. Care should be taken to see that most of the data which is analyzed should be interpreted. It is advisable that a plan should be prepared beforehand as to the manner in which the data is to be interpreted.

(viii) Writing of the Report and reaching to conclusion

Writing of the report is the final step of research. The process of research becomes incomplete until report has been written and distributed. The report should be written in simple and meaningful language so that different consumers may not have difficulty in grasping its findings. The final report can be utilized in different ways. It can be useful for the guidance of the agency sponsoring the research in dealing with some practical problem. It may be for wider audience of people with similar problem. Lastly, it may be for the use of administrators in formulating policy. The report should be brief and precise. At the end a summary containing the essential points should be given.

THE PRESENT STUDY

The work on such theme of craft technology and the condition of artisan class during 18th century northern India, have never been easy, as it required a critical analysis of enormous amount of source materials needed for the purpose.

The craft and its related technology could not keep pace with the passage of the time and so it becomes difficult for any scholar to keep track and get all information related to technology and craft. It is also difficult to keep the track of incorporation of those 'ideas and techniques', which have been changing with the passage of time. The work also become very difficult when a comparative study is done between the indigenous technology and the technology coming from abroad and judging which technology came from outside. The analysis is required in order to differentiate between the purely indigenous and purely foreign technology and techniques. The study taken in
this regard focuses upon Indian scenario but it has not left all together the technological changes happening outside the periphery of the Indian subcontinent. The neighboring 18th century states like China, Central Asia, Persia and the Middle East, have been taking into account. The efforts have been made to reestablish the linkages and the sources from where such technology came. Chinese were proficient enough in certain crafts such as textiles, silk manufacturing and in other technologies whereas in other societies particular in Persia and in the Middle East the technology was transferred with the coming of number of people from Central Asia and Middle East to India in due course of time. So in that regard the transfer of foreign technology to India forms important segment. Detailed studies of technology transfer (more importantly from coming of Muslims into Indian subcontinent during 13th century up to 18th century) make it vast and detailed study. The transfer of ideas and techniques and its incorporations find prominent study. The study of European context is also very interesting as Europe was trying to break from the past agriculture setup to industrial setup, with the enormous ideas and institutions at its disposal. It had already experienced a period of Renaissance which brought out Europe from the Dark Ages. Religious orthodoxy gave way to the age of Enlightenment, Scientific Thought and the period of scientific development. In that regard also Europe had greatly adopted those technologies, which had to transform its moribund society into modern industrial one. The study of pre-Industrial Europe and more precisely Pre-English condition, in having a comparative study between the European technology and the Indian one. The factory system as we know existed in the pre-British societies which later on served as the base for industrial society.

Parallel to European factory system there existed in India in the form of Karkhana system. We find both the systems, in nature and practice greatly similar. Our studies also focus upon the aspects on transformation in the Indian context, with the downfall of the Mughal Empire. The Karkhanas system greatly suffered and it lost the patronage system though this situation was greatly saved with the emergence of local kingdoms in the 18th century India. But in the European context, we don't find change as far as the political scenario was concerned. The political setup of pre-Industrial England was not affected as it happened in India. We find the same factory system in English condition paved the way for the great Industrial Revolution. A modern industrial set up replacing hand-operated machine with that of mechanically powered and steam operated machine in 18th century England. So the effort is made to incorporate all points of view from across the continent and bring all those information which were very important for understanding 18th century Indian set up. In this work, we focus upon the existing industry in 18th century India, more significantly textiles, metal, chemical, allied industries apart from agro-based industries, keeping in mind changes in technology, along with this study of artisan class also after going through the original sources vis-à-vis the secondary and published work.
The appropriate research methodology has been applied for working on difficult theme as of technology and the artisans of 18th century India which required in-depth analysis of the sources and the gathering of information bit by bit, piece by piece, and interpreting in one's own language and style. The varieties of materials available of working on such theme make it more difficult, therefore working on the theme does require analyzing material from different sources. The theme was never going to be easy when one takes up the task of understanding the technology of 18th century which is more in continuation of previous system. We are to understand the sources starting from 13th Century down to the Mughal period, as we find more or less the same kind of technology with minor modifications continuing down to 18th century.

In this regards it is extremely important to know as what kind of sources have been consulted, analyzed and interpreted for preparing the work. The foremost it was done to have firsthand account from the available memoirs, manuscripts, documents from Delhi Sultanate period as well as from the Mughal period. In regard we find Tarikh-i-Firuzshahi of Ziauddin Barni, Tarikh-i-Farihsta and other related works very important for Delhi Sultanate period whereas the great works, like Ain-i-Akbari, Akbarnama, Tuzuk-i-Baburi, Tuzuk-i-Jahangiri, Tarikh-i-Humaynu wa Akbar, Dasturul Amal, Makhzane Afgana and other Persian and Arabic manuscripts. We also have Firmans, Nishans, and other sources like paintings, etc. also useful in order to understand the changing technology which belong to the Delhi Sultanate period and Mughal period. Apart from that we find that European sources some of which comprise of travelogues, the factory records or the eyewitness accounts of those Europeans, who visited India during 18th century or before that. The travelers like Barbosa, Bernier, Fitch, Manrique and Manucci, etc. and number of others who served the purpose of providing their own accounts and of the Indian system and corroborated the writings with Indian accounts. The records and the report from different sources also served the purpose for framing this work and bringing it to this shape.

THE PROBLEM

The whole work have been divided into major five chapters along with that a major portion on its related information, contained in appendices, a thorough chapterization has been done for better understanding the theme. In chapter First the studies have been done on the aspects of Karkhana system as it existed during the entire Delhi sultanate period, more particularly under the Tughlaqs, Syeds and Lodhis and the passing over to the great Mughals, who were more organized in that regards with the expansion of the Mughal empire it needed household goods, services, or luxury items on day to day basis, all those were supplied through Karkhana system as there was no other alternative left to them from where they could procure such items for state
and for maintenance of royal households. Detailed studies have been done in regard to official responsible for maintaining those Karkhanas, their assigned duties and their status and their perks and privileges. We have also studied the responsibilities of official like Mir-i-Saman and Khan-i-Saman, tahvildar, Darogha, Musstaufee and Nazir as they were very important. We have provided all those details of manufactures from the Karkhanas which were produced on the requirement by the state. In this chapter we have also included the detailed study of Karkhana system existing away from royal control and more importantly in newly independence state like Hyderabad, Oudh, Mysore and the Maratha Kingdom and in other places. The item for produce in Karkhanas was also taken into consideration, thus this chapter pertains to understanding this system in totality and the aspects of its utility.

In the second chapter we have tried to understand the vital industry of 18th century namely the textiles industry. As we are aware the textile was one of the most sought after the industry, as per its demand and as per its utility, for the general masses and the elite class as well as the royalty. The study becomes very important as India has got long tradition of handloom textiles industry and the technology of more or less about five two thousands years of time. But in this study we take serious note of of its history from the first Muslim empire dawn to the coming of British in India. By the time of 18th century textile industry was already in advance stage as per its productivity and use was concerned. It did produce the required quantity of the textile but those were not in abundance as due to some constraints in the production. It was greatly limited to satisfying the needs of only to the better of section of the society. The textiles industry thus not meant for more production as it lacked technology during 18th century the limitation that effect was also due to the fact that Indian lacked technological innovation and hardly any new aspect in technology existed in textiles industry. In this study we have tried to incorporate those aspects which are important for understanding these intricacies of textile industries as it existed in 18th century and how many technological innovations took place during the five hundred years of time. We have also tried to understand the comparative marketisation of the Indian products and its demands from overseas and we gather that till 18th century Indian products dominated far and wide and were in great demand in Europe also so much so that in one remarks the poet Daniel Defoe says that “from bed-spread from handkerchief and from curtain to tablecloth, homes are full of Indian textiles.” This remark suggested the fact that until the coming of British in respect to handloom industry India was major industrial power which had international recognition. We have also studied about production centre, trade route and the supply route for the raw material. The aspects of British entry to India and later on their interest to capture textiles market are very important. In the same context industrial revolution and aspect of machine made textile goods and with competition from handloom goods another important studies in this chapter. We have also incorporated the
manufacturing technique of textile, the colouring and varieties of textiles products and its specification region-wise. Thus this chapter is very important for knowing the 18th century industry in India.

Another chapter which is of the vital interest is chapter on metallurgy and auxiliary and ancillary branches. Indian indigenous industry in this regard becomes important as it could not develop on the pattern of European innovation with mining and use of metal coming to the European context, so in comparison to Europe Indian lacked the metallic technology as it was in Europe, metallurgy as a important industry could not emerge as vital as other industries with the certain disadvantage in the Indian scenario as India did not progress in specific technology due to the reason being that the Mughal hardly gave thought to such new ideas.

Another aspects of improving industries in modern times the Indian society generally remain stagnant, static and having little space for scientific development apart from very crude form of industries in which available metals converted into objects of utility by the local smith whose efforts have been made for getting a level of mass production. Still it was regarded as mysterious kind of technology forming the branch of alchemy during medieval age with no scientific revolution, with no innovation almost negligible in regard as it was happening in European context. Metallurgy suffered in the Indian context but no denying the fact that there existed such industries as per the need of royalty, of elite class, for those sections of society which needed whenever they required. In the crude form we find the existence of mining techniques in which metals were taken off mine and coal and such other item we find from different locations. The use of Iron, copper, salt and alloy metal are reported by various sources, where as we find chemical industries having important place among such industries in which gunpowder; soap, lime, soda, glass and paper form important items of production but again it was very limited to the production at the label of use for the royalty in the elite class. In this aspect we also find certain references of techniques of salt and salt mining. From this point of view understanding 18th century industries we find the chapter is of greater importance.

The chapter four is related to the agro-based technology and products. India being the predominantly agriculture country the agrarian industries in the form of cotton industry did exist right from the beginning of civilization. Right from this point of the view agriculture technique which formed the part of technique used by farmers in ploughing the field down to its harvesting, its irrigation and its use in sugar making technique, oil processing technique similar technology required in agriculture. We also find in the chapter the allied technique of agro-based society for example, carpentry, smithery, the tannery and the processing of food, as it is so important aspect in this regard. In this chapter also we find the aspects of understanding the relation between peasantry the artisan class and those two great segments of Indian societies
worked how this maintained the relation, what was mode of exchange of services and worked them apart from the barter system. So this chapter is significant in understanding handicrafts technique 18th century in India.

The last and fifth chapter deals with the position and the condition of artisan class during 18th century in northern India. In this chapter we come to know what formed the basis of position of artisan class. Artisans are vital segment to any society but it is very difficult to determine their exact and particular position in society. In this regard we have tried our best to understand the socio economic condition of the artisan class, society, their wages, the guild system, their fluctuating fortune and their relation with their patrons as 18th century India remain volatile with the passing of the Mughal Empire. It was important to know how much artisans were affected and similarly how much change status in the society we have included at those aspects in this chapter and tried to unravel the truth behind the condition of artisan class when the British were knocking at door in search of market with new technology they attacked the existing indigenous industrial set up which hit hard the artisan class. We get to know during 19th century that artisans were greatly affected, those villages were uprooted and industries were targeted by British official. It becomes almost significant to know the condition of artisan class in order to understand the technique and crafts of the 18th century Northern India.

Despite the political upheaval which Northern India experienced during 18th Century, the economic progress of the region did not hamper too much, though it suffered from the hands of rising smaller nationalities who wanted to carve out their own niches on the vast Northern Indian plains which had dismembered as a result of the Mughal declining in power and prestige. The emerging smaller Kingdoms and the local potentates did manage to have some share in the emerging economy as the matter of custom and toll was not fully resolved, so the passing trading Karvans from one kingdom to another kingdom had to face certain bottleneck and had to pay more tariffs than they previously used to pay. The changing scenario of 18th century northern India make it difficult for researchers to grapple with certain problems and reach to certain conclusion that how the century which one is investigating happened to be different from the previous one. Thus, the political situation in understanding makes it amply clear that the shifting political power to 'cartelisation' of Indian market as propounded by C.A.Bayly in his famous book "Townsmen and Bazaars; North Indian Society in the Age of British Expansion" and K.N. Chaudhary in his work "The Trading Works of Asia and The English East India Company" that there emerged numerous hubs in Northern India and from centralized economic setup to decentralized smaller pockets made it a different kind of setup in which local patronage led to the survival of the economic structure as the craft and the craftsmen found new patronage in Northern India.
The famous Karkhana system which survived from long duration of time gave way to the small workshop system under the patronage of emerging local feudal lords in the forms of talukdar, zamindar and courts of Nawab, as the changing scenario supported the changed economic structure. The same period is also characterized with the coming of European scenario which already started with the Charter Act of 1600 to East India Company which also established factory in 1600. Not only that we also get other Europeans which included the French, the Dutch, the Portuguese and other smaller nations had mercantile nations initially rather than having political and territorial thrust. Their main aim was to get maximum profits out of their sold manufacture or whatever they could get from India and sale in the European market. So driven by those given profit they also managed to bring European technology with them in order to increase productivity and sale the goods at cheaper rate in comparison to existing handlooms products or other products coming out of Indian craft and technology. In this study we have found that the textiles and its technology, its trade form the basic industry in India and that is why the European companies targeted the textiles industries more than they did to any other industry. A detailed study has been done on this theme involving textiles right from the beginning of thread making, cotton carding, weaving and finally its giving shape with dyeing the cloth. Undoubtedly the technology though not very mechanical it used to produce one of the finest cloth in the world and there was no comparison in that regards but as we got the information regarding the technological revolution in Europe we have analyzed that Indian textiles faced stiff challenges and could not compete with the machine made cheap goods. Ultimately finding difficult to compete, the Indian products gave way to the European products. With the establishment of foothold of East India Company we find that the British managed to have system in which incessant flow of wealth was insured through trading and another benefits as the later historian put it terming it "Drain of Wealth" from India to Britain.

It was that drain which had a system of involving the commodities procured from Indian market on cheaper rates and selling the same on higher prices in British or European market. With the changing mechanism the British had their own industrial goods which were to be sold in Indian market at cheaper rate than the Indian indigenous products. Thus it was the effort of capturing market which had huge population and huge demand. The story from the Battle of Plassey to Battle of Buxar in 1764, we find that the British had acquired the control of not only trading right but also a vast expansion of territory from Bengal to Oudh and a large extent north India. So the existing system of Indian indigenous industry the craft is technology the dependable associated people with that to were going to be effected in more than one way a great transformation was to take place which greatly changed the basic structure of the Indian handicrafts the composition of Indian artisan class their income and there marketization of products. It was by the middle of 18th century that we find things started changing seriously as the British official
targeted the Indian industries and the artisan for the sake of extracting more and more profits from the Indian market. The system which was continuing from previous centuries had to be altered, then only the British mechanism could work and we get to know all these changes taking place. First, it was the effort of the British official to lower the wages of the Indian artisans so that their interest in the existing system should be lessened. They reduced the tariffs on British goods from India and goods coming to India. At one point it happened that it was hardly demand for Indian goods and hardly it remained beneficial for Indian traders to trade.

The declining of Mughal Empire had given way to growth of new commercial centre during 18th century. Though most of the existing towns which were once hubs of all activities like Dacca, Murshidabad, Banaras, Agra, Lucknow, Ahmdabad and other such towns which once boasted of great commercial centres, were losing their status. Buchanan traveled the township of Dacca, Murshidabad finding them deserted and the jungle grown in place of industries and the colonies of the artisans. The artisan wanted an alternative source of income in most of the cases they fled to rural areas and took up agriculture and sundry jobs for their survival. But despite serious problem the towns emerged in northern India during 18th century as a result of the local patentees having their own capitals in different localities for example towns like Najibabad, Bharatpur, Rampur, Jagdishpur, Faizabad, and Farrukhabad. It had scores of other emerging towns during 18th century as those became the capital towns. Most of the northern Indian local lords who carved out their own local principalities and the emergence of these towns the interest trade artisan class also became attached with those town and we find smaller town having specialized handicrafts during 18th century. For example brass work going to happen in town like Moradabad, glass work in Firozabad, Agra for marble work, town like Banaras having specialization in textiles work and similar kinds of work we find in eastern part of India for example Patna important for Salt Petre and Bhagalpur specializing in silk so it cannot be said that by 18th century there was total disturbance and chaos, but rather shifting old with adjusting new socio-political and economic setup. It was out of compulsion rather than by choice, the circumstances forced by British with the new technology with the political force.

Now coming to the point of the technology itself we find that Indian cottage industry suffered greatly and unfortunately there was no immediate replacement of those with any new industries it took more than hundred years of time for such replacement so the rest of 100 years the India had to adjust existing technology which they had during Mughal period whether it was textile industries and the technology and it was metallurgy or chemical industries all could now go for more production and all could not be changed to mechanical or any other alternative source for running the industries. We find the existing cottage industries managed to fulfill the demands for both the
masses as well as for the elite class, crafts ranging from textiles, silk, copper, iron, salt making, diamond making and scores of other such homemade goods. We find it continued to work despite serious problems in the societies.

As far as the rural technology is concerned, we find the old Zajmani and Dadani system continued in which a particular class of artisan used to have their set of people to which they catered their need to. The rural technology in sugar making, oil pressing, leather work and carpentry and other such important aspects of rural life were all depended upon existing rural cottage industries away from what was happening in the town. The village self-sufficiency system remained a great strength for the survival of rural technology despite the shortage of cash, the system continued on the barter system and the rural artisan gave support to the farmer as their existence was depended upon their mutual cooperation but the rural India also suffered in the hands of the greedy eyes of the British who were interested in more and more realization of maximum revenue from the countryside. We find at the outset the British rule itself the Izardari system in rural Bengal greatly damaging the fabric of the rural societies. The absentee landlordism had broken the backbone of the peasantry as well as the artisan class also. Thus it finally made difficult to cope with the British pressure, many villages had deserted look and the problem was graver during 19th century where India experienced recurrent famines, some natural and some as a result of the wrong British policies. Thus, all damages were done to the handicrafts and the artisans were affected, along with other sections of the society.

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