Chapter 2

Technological Development, From Craft To Factory Production
The industrial revolution brought with it new technology, which was very crucial in the future economic development of the countries. Technology referred to machines and equipments employed in production. In its wider sense it included the knowledge and ideas that helped the development and use of such machines and equipments. In other words, "all such changes in physical conditions, managerial know-how, labour skills etc., which help in multiplying the outcome of efforts are collectively expressed as technological change".¹

In this chapter we will take into account, the inventions and discoveries, and changes in organisation of production which were affecting the leather industry during the period of our study. These technological changes were quickly introduced into the Indian leather industry as it was chiefly producing for the military requirements of the British government. These sudden changes were bound to have an impact on the native leather industry, which survived for centuries on age-old traditions which were passed on from father to son. The major areas to be affected by the introduction of the new techniques were:

(a) The organisation of the industry – the village chuckler who performed all the functions from removal of hides from the dead animals to the production of the shoes or other leather articles was affected the most by these innovations, which led to specialization within the industry.

(b) Changes in preferences – the opening up of villages brought the machine made goods to the villages giving competition to the village artisan. The iron buckets were replacing the water bags and cheap plastic chappals from Japan replaced the country jootis.

(c) Changes in product range – technology introduced a wide range of products made of leather. Besides shoes, saddlery, leather buttons, belt rollers, picker bands were also in demand now.

¹ C.P. Thakur and G.S. Aurora (eds.), Technological Change and Industry,( New Delhi, Sri Ram Centre for Industrial Relations, 1971) p.1.
(d) Extension of markets – technology led to expansion of markets, which until now had centred around *haats* and fairs in villages.

(e) Effects of technology on state policy- In an industry like leather, where factories were being set up to meet the Government demand, the state policy in form of Government aid, tariff protection and technical assistance would play a very important role in assisting the industry to adapt to these changes. As was to be expected all the initial technological innovations and inventions appeared first in Great Britain. Subsequently the industrialisation of other countries depended on the acceptance of these innovations.

Thakur lists three sources for technological know-how, scientific research, inventions, innovations and international transfer and diffusion.\(^2\) As expected in a colonial economy, lack of interest of the Government to invest money on research, most of the initial technological knowledge was achieved by means of diffusion. This diffusion took the form of transfer of operatives, managerial skills and import of machinery. This was more evident in the Kanpur leather industry, where large concerns were established to meet the British demand. Here it was in the interest of the Government to ensure that the products of these concerns matched the European standards. As expected, the machinery was imported, and so were the experts. The capital was European and the market was ensured by the Government. Later research institutes were established in India to help the industry develop further.

**Organisation of The Industry**

In the old economic set up, the country artisan was the industrial worker. His position was fixed, where he was paid in kind for jobs done by him. Gadgil groups the village population apart from cultivators into three: the socially and economically well off consisted of priests and accountants; the second group was of artisans, comprising chiefly blacksmiths, carpenters, shoemakers; etc. and the last category consisted of village servants including

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\(^2\) Ibid.
watchmen, and scavengers, etc. The Chamars, the traditional workers thus acquired a secure position for themselves under the jajmani system, whereby a Chamar had his own constituency of patrons or jajmans, whose dead animals he was entitled to. It was a form of simple commodity production, as described by Marx, in which the means of production are owned by the producer and his needs are satisfied through exchange, which was limited to the local market. This security was shaken by the advent of capital, leading to two types of restructuring, one social and other economic. We shall first look into this restructuring within the leather industry.

The leather industry could be classified into three sectors, which are vertically linked with each other. We will study the changes in each sector: (1) Carcass collection and flaying; (2) Tanning; and (3) Leather manufactures.

**Carcass Collection and Flaying**

This was the primary stage of the leather industry which was dispersed throughout the rural area. In the villages it was done by the Chamar (chukler) who was recognised as a village menial, receiving as perquisite the hides of dead cattle which he tanned. In return the Chamar supplied shoes and other leather articles like water buckets, leather straps and whips. But with the establishment of factories and increase in hide trade, in Kanpur this right came to be questioned. The factories had their agents who purchased the hides from the villages. The hide trade in the second half of the 19th century had reached to such heights that many of the foreign firms had agents in India who supplied the raw material. The chief among them were “Stork, Halim and Co.” who were recognized as the leading hide merchants in Delhi and Kanpur. The firm “H. Nabi Baksh and Wasay” too had gained considerable reputation in this field, doing business to the tune of 1,50,000 buffaloes and

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300,000 hides a year. In the 1880s a large number of tanned and half-tanned hides and skins were exported to foreign countries from the part of Madras. Towards the end of the century this took the shape of raw hides and skins being exported from Madras and Calcutta. While the quantity of hides and skins exported raw was to the tune of 654,723 maunds, it rose to 1,471,743 in 1900-01. And that of hides and skins tanned for the corresponding years was 341,729 and 469,969. The quantity in case of raw skins had almost doubled. This trade increased both in volume and value, the increase in the latter being more rapid.

The increase in the value of raw hides and skins affected the rural economy leading to the establishment of organizations for collection of hides. Many large firms came up which were devoted to dealing in hides. Haaji Abdul Gafoor Kadir Bux had outlets all over the country for collection of hides which were brought to Kanpur and prepared for export to Europe and America. This firm represented Messrs Schroeder Smidth & Co., the largest purchasers for German and Austrian markets. Other names were Messrs Assmann & Co., and Ralli Brothers etc. Mr. Halim was another reputed dealer in hides and skins who in 1911 held the contract for supplying to the Government Harness and Saddlery Factory. He had agencies all over the country for acquiring hides and skins. This hide trade was carried out by German firms at Calcutta who devoted themselves exclusively to the hide export trade. These firms banded themselves into an association or ring which was almost exclusively German. They worked in association with the Tanners Association in Germany and Dealers Association in Hamburg, monopolizing the entire trade in hides and skins. The hide classifications were also made to

7 Ibid., p.61.
10 Somerset Playne, and A. Wright, The Bombay Presidency: The UP and the Punjab: Their History, People, Commerce and Natural Resources, op.cit., p.453.
11 Ibid., p.453.
suit the German tanners. A German line of steamers carried the hides from India to German or Austrian ports, therefore making Hamburg, Bremen and Trieste the main distributing centres for various districts on the European Continent.\textsuperscript{12}

This ring which operated from Calcutta was supplied by the Kanpur contractors as it was the major centre in hide trade. An estimate of this huge trade can be made from the figures available for 1913 when of the 430,564 maunds imported from the United Provinces, 264,965 maunds came from Kanpur city, followed by Gorakhpur and Benares with 36,905 maunds and 27,926 maunds. Kanpur city was also the largest exporter of raw skins at 2,12,613 maunds of the 2,68,613 maunds exported the same year. While the exports for raw hides was high, those of tanned hides and skins was almost negligible.\textsuperscript{13} This huge trade was responsible for the emergence of a number of firms which dealt exclusively in hides and skins. Some of them were the managing agents of the German firms.

Railway rates policy also favoured export; special low rates were granted by railways on hides and skins intended for export which could only be availed by port traffic.\textsuperscript{14} The other factor which played an important role in this trade and on which the large concerns had an edge was the quality of hides and skins. The village tanner depended on the hides of cattle which had died a natural death usually of old age, sickness or starvation. The large manufacturers rejected the badly damaged hides. In India the male animal was seldom slaughtered for food, because as a rule he was worked until he dropped dead. This long service in cart and plough badly damaged the hide.\textsuperscript{15} There were other reasons too that affected the quality of the skins. The skins were generally at their worst during the rainy season when the animals

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\item \textsuperscript{12} Henry Ledgard, "Indian Hide and Leather Trade", \textit{Journal of the Royal Society of Arts}, Vol.LXVI, p.278.
\item \textsuperscript{13} Dept. of Statistics India, \textit{Annual Report of Foreign Trade of United Provinces of Agra and Oudh for Year Ending 31st March 1913}, pp.70-71.
\item \textsuperscript{14} \textit{Leather Industry in India, AIMO Monograph No.12}, (Bombay, 1948) pp.11, 12.
\item \textsuperscript{15} H.G. Walton, \textit{A Monograph on Tanning and Working in Leather in the United Provinces of Agra and Oudh}, (Allahabad, 1903) pp.5-6.
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became feverish through exposure. Hair or wool increased in length in the cold weather leading to loss of tissue resulting in thin and papery pelts. The skins were in better quality when they were derived from animals which were slaughtered for food. During the cold weather puripuri which is common among flocks, damaged the skin rendering it unfit for first class work.

Branding was a major cause for injury to the hides. The way in which cattle were mercilessly branded ruined a huge number of hides. The cattle were branded in some cases to satisfy the owner's aesthetic eye. It was supposed to be efficacious in keeping away evil spirits and in many cases as a remedy for diseases, especially staggers or fits. In some cases the cattle were branded to reduce the value of their hide as it was a common practice among the chamars to poison cattle for their hide. To save the loss of their cattle, owners took to branding it so that the hide when removed would fetch very low price.

Once the cattle died it was removed to a place away from the village, in this part of U.P. called "Bhger" where the next process, flaying was carried out. Here too, a lot of damage was caused to the hide as sometimes a long interval passed before the flaying was started. During this time the carcass was exposed to the vultures and putrefying bacteria. The process was carried out using very elementary tools like the cutting knives. As the hide had to be flayed the same day to avoid rotting, the flayers tried to remove the hide as fast as possible, damaging the hide by cutting at wrong places. The hides thus damaged due to disease, branding or bad flaying was not acceptable to

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16 The Rural Non-Farm Sector in Uttar Pradesh, Sub-sector Profile, Leather, CLE Report.
the large concerns set up in Kanpur which required good quality hides for the wide range of articles that were manufactured in their premises.

A significant change was witnessed in this sector, in an attempt to have control over quantity and quality of raw material, a number of municipal slaughter houses came up in different parts of the country. With centralized slaughter houses the Chamar was replaced by the contractor or agents of the slaughter houses who moved from village to village collecting dry cattle. This led to the formation of new interlinkages at the top of which were the owner of the large tanneries in the city, followed by the wholesale hide merchant also located in the city, and the primary contractors who operated in the villages. They formed such a strong social and community interlinkages, that it was extremely difficult to enter the trade at this level, though it was relatively easier in the tannery stage. The wholesale hide merchant located in the urban centres was the strongest in terms of the capital base and financed the entire operations of the market. The primary contractors were often relatives of these hide merchants.\textsuperscript{22} Besides these contractors, some large concerns had their own agents for collection of hides.

The emergence of large urban centres led to a substantial change in the political economy of the leather sector. The traditional village flayer who until now had total control over the most vital raw material in the sector was now the most disadvantaged. The trade in face of competition in the form of dealers and contractors was so biased against him that he was left with a few options. With the increase in demand he could have benefited but it was not the case as the agents of the factories purchased hides directly from the owner of the animal at a price fixed by him.\textsuperscript{23} Another interesting phenomenon was the decline of tanning in villages .With the increase in value of hides and the ease with which they could be marketed in cases where the Chamar did manage to acquire the hide he did not tan it. The hides were sold to the dealer for cash, he in turn then became an intermediary between the villager and the

\textsuperscript{22} Ibid., p.13.
\textsuperscript{23} Ibid., p.18.
agents of the factories. In many cases the dry cattle were sold to the agents of the slaughter houses.

As the slaughter house hides were obtained from the cattle which had been fattened up for meat, they were of good quality even though the animals sent for slaughter were usually past their age/health to work. With control on the quality of hides and a substantial price escalation, the recovery of hides and skins became a highly profitable business. This led to the entry of various castes and sub-castes; earlier this work was restricted to the Chamars. The Muslims came to dominate in this section of slaughtered hides as due to religious beliefs Hindus stayed away. Even the native entrepreneurs who ventured into the hide trade business were mostly Muslims.

As the initial business concerns in Kanpur had come up in response to the demand of the army, the Government took measures to ensure an increase in good quality hides. Steps were taken to increase the proportion of leather selected by the army and thereby reducing the proportion of light weights and rejects which though commanded a high price in the civil trade at home but were unsuitable for army work. Steps were taken to prevent adulteration with addition of magnesium salts and sugar to add weight to the hides. This not only spoilt the hides but also required considerable expense for washing off the adulterants. To check this practice, during the World War adulteration was made a penal offence under the Defence of India Rules. To check the faulty flaying a pamphlet prepared by the Director of Industries, Bengal describing the proper methods of flaying and curing was widely circulated.

**Changes in Tanning Sector**

In the carcass collection, the only change that occurred was with regard to the quality of the raw material but it continued to be done by the old implements with little improvement. It was in the tanning sector that major

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technological innovations were added regarding the machinery, chemicals and the methods of tanning. Traditionally the leather workers tanned the hides and skins using crude native methods handed down by the ancestors. There were only some variations as to the quality of raw materials used, the basic method remained the same everywhere. The tanning requirements were also few, the bark used for tanning was easily available from the forests nearby. Using these materials the tanner removed the superfluous matter from the hide bringing it from the soft raw state to the tough, imputrescible material known as leather.²⁷

The bag tanning was most extensively used by the native tanner. This involved removal of moisture from the skins as this moisture attracts bacteria which destroys the skin. To check this, the tanner either treated the skin with a certain compound which the bacteria did not attack or removed all the moisture from the skin.²⁸ This was followed by soaking to cleanse the salted hides thoroughly of all blood, salt and other extraneous substances.²⁹ For the next process, liming, the hides were placed in pits containing a mixture of lime water, and sajji (impure soda). The hides remained in the pits for three to eight days depending on the season – longer time was required during cold weather. The limed hides which were swollen were unhaired and fleshed on a tanner’s beam which was a stone slab using a rampi or currier’s knife. Then they were passed on for bating for the removal of lime; here the hides were placed in large earthen vessels containing fermented mixture of tan liquor.³⁰

After bating the hides, they were laid on a slab and scrapped and then wrung dry for removing the excess lime. The butt end of the hide was fixed to the top of a stout, immovable stake, the neck was lapped over the middle of a

bamboo which was then turned by men at either end like a windlass. Finally these hides were sewn up into a bag, tan mixture was filled into it and was suspended by the neck from a wooden tripod over a nand or from a tree. The liquid which forced through the pores of the hide dripped into the nand below, which was again pored into the bag. The entire process of tanning was completed with these simple processes. It was in this section of the leather industry that the technology made its presence felt. While earlier the tanners in this province were restricted to the use of babul bark for the tanning of the hides, the larger concerns started experimenting with alternate tanning agents. As babul base, the chief tanning agent employed in Kanpur, though possessing a high degree of firmness and durability had its limitations as the hides tanned by it could not be retained to meet the demands of the markets abroad. Cassia Auriculata used in Madras had an edge over babul in this respect but the cost of railway freight made tanning with this substance commercially unprofitable in these provinces. To increase and systematise the cultivation of Auriculata, large tracts of waste land along canals and railway lines were acquired.

While the Government was experimenting with better tanning substitutes, the leather industry witnessed a major breakthrough with the introduction of chromium salt as a tanning material in America. Chrome was superior to all other forms of leather and much more durable. After its introduction in 1858 chrome tanning became widely accepted, sodium dichromate was the basic chemical used in this tanning. Here a mixture of sodium dichromate and sulphuric acid was reduced with organic or inorganic reducing agents reacting in basic chromium sulphate. It was this basic chromium salt that was really used in tanning. This chrome tanned leather

33 Industries Department, United Provinces, Proceedings, 1919, p.23.
was strong and possessed a high degree of stretch making it perfect for production of upper leather.\textsuperscript{35} It was waterproof or non-absorbant. While leather tanned with other tanning materials absorbed water readily like sponge, it promoted decomposition when subjected to regular wetting and drying. On the other hand, chrome leather did not absorb water. Actually it was a difficult task to thoroughly wet the chrome leather once it became dry. Chrome leather being a combination of inorganic material and hide, when subjected to the same treatment of wetting and drying it remained intact. In fact subject to this treatment this leather became soft and more flexible.\textsuperscript{36} This property influenced the entire leather industry. Its use for commercial purposes spread rapidly in America, the Continent and among the English tanners. As a large quantity of hides and skins were exported to these countries this had a direct impact on the tanners in India, be it the large trading concerns or the village tanner who sold his hides to the dealers. As chrome tannery with the accompanying leather dressing shops required a large amount of machinery, it could be successfully worked on an extremely large scale only.\textsuperscript{37} This completely ruled out any attempts to be made by the village tanners to stay in business. For the requirements of the army, the Government took up the initiative to introduce chrome tanning by the large concerns. Experiments were carried out in Kanpur and Madras. In 1903 this was put into practice with preparation of water bags in Madras. Encouraged by the success, a Government factory for chrome tanning was set up but the concerns which came later had to close down due to lack of Government assistance.\textsuperscript{38}


\textsuperscript{36} Alfred Chatterton, A Monograph on Tanning and Working in Leather in Madras Presidency, op.cit., p.46.

\textsuperscript{37} Ibid., p.46.

In 1907, on the recommendations of the Industrial Conference it was decided to start a chrome leather factory in the United Provinces. Arrangements were also made to start a school for teaching chrome tanning and boot and shoe making. To help out the industry circulars from the Secretary to the Government were issued to the Inspector General of Police, I.G. of Prisons, Director of Land Records and Agriculture, Superintendent Govt. Press and Post Master General, of United Province, asking them to try out the chrome leather to check its durability and usefulness. This leather was to be used for making boots for the government servants, who were supplied with uniform boots and for water bags for the wells on Government farms. They were asked to keep a record of its durability as compared to bark tanned leather. All major concerns in Kanpur particularly Messers Cooper Allen and Co., and The North West Tannery Co. took up chrome tanning.39

Thus the tanning industry which was initially based on the bag tanning practised both in the rural and urban centres now came to be organised into the tanneries producing

1. Vegetable tanned leather using bag tanning process.
2. Vegetable tanned leather using European methods.
3. Tanneries producing chrome tanned leather.

The native tanners being restricted to the leather of the first section only, they neither had the capital nor were enterprising enough to venture into production using the latest techniques.

A notable innovation which influenced the leather industry was the introduction of the drum by Durio of Italy in 1904. This heralded a new engineering era in the leather processing.40 Drum was introduced into all the major concerns in Kanpur. These stock drums were built of planks with a space of about two inches between each. The drum revolved in a pitful of water which percolated freely. The inside of the drum was studded with large

39 Industries Department, United Provinces, Proceedings, 1908, pp.4-5.

wooden pins. The main objective of soaking and stocking was to soften the hides and remove the salt which impeded plumping.\footnote{H.G. Walton, \textit{A Monograph on Tanning and Working in Leather in the United Provinces of Agra and Oudh}, op.cit.,p.7.} The process of bating i.e. the removal of lime was done using the drums. Earlier the hides for bating were placed in large earthen vessels containing a mixture of tan liquor. Now for this process the hides were placed in drums revolving in a pit containing a mixture of bran and water.\footnote{Ibid., p..7-8.} With the introduction of the new methods the time of tanning was also reduced.

\textbf{Change in Leather Manufacture}

Major changes were witnessed in the manufacture of leather good section, which besides shoes came to include harness and saddlery, leather belts, briefcases, etc. The most significant and visible changes took place in the footwear section, not only in respect of the durability but also in style. While earlier a single wooden last was used to make the native shoes or \textit{jootis}, now separate iron lasts were used for the left and the right foot. The sewing too was done by hand by women or boys. The sewing machine also created considerable change in the quality of the footwear. Earlier all the functions were performed by the artisan without the use of any kind of machinery. Now with the introduction of Singer machine, the artisan gave up the practice of hand sewing.\footnote{Mohd. Ahmad Jamal, \textit{Leather Industry in U.P. with Special Reference to Kanpur and Agra}, op.cit., p.45.} Diffusion of new techniques and the coming of the British saw an increasing demand of footwear in general. To meet this demand some skilled Indian shoemakers were employed to assist the English shoemakers who accompanied the British. The local workers mastered the technique of making English style shoes much to the satisfaction of the British officers. On being discharged from the service they started manufacturing English style footwear in their own houses. As the cost of these shoes was comparatively low, these shoemakers were able to sell their
product in the retail market with much advantage. English style footwear of cheap ordinary quality now replaced indigenous style shoes.\textsuperscript{44}

There were three types of leather footwear-manufacturers. First, the small units making shoes for local consumption. These consisted of autonomous worker hiring little outside labour and catering to local markets. Second and most common category, the household units employing upto ten persons as piece rate labour who worked against orders and sold in the wholesale market. The owner of the unit being a skilled worker himself picked up orders from the wholesale market, manufactured the footwear mostly by hand for the wholesaler. The wholesaler purchased it against a credit slip or purchi which could be cashed at discount.\textsuperscript{45} These petty shoemakers were known as Namawalas and Daliawalas in Agra. They either worked at their residences or at the workshops with the members of their family. The third category consisted of large- scale units which hired labour to produce in bulk.\textsuperscript{46}

\textbf{Changes in Consumer Preferences}

The introduction of technology and demand led to increase in diversification in the product. While in the earlier economic set up of the self sufficient villages, the demand was limited, the whole system worked on the principle of simple exchange with the artisan producing to meet the demand of the consumer and got paid in kind.

In case of leather, the demand was limited to shoes and water buckets. Sometimes one artisan was sufficient to meet the demand of the entire village. With the influx of capital and opening up of the markets this simple exchange was disrupted. Merchant made his appearance and the artisan started producing for the market. In case of leather, the raw material was removed from the reach of the village chuckler and in case of the shoemaker they were

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now engaged as detail workers. Besides the shoes and the water buckets a number of additions were made to the product turned out. The latter in any case was being replaced by metal buckets.

As most of the concerns had come up with the Government assistance in terms of contract they took production of saddlery, and accoutrements besides the army shoes. They started manufacturing handbags, suitcases and cabin trunks.\textsuperscript{47} Experiments were made with new types of leather. Red leather (Nari) was made from goat skins, patent leather (locally called luk), more commonly known as barnish, blue leather (Nilah) was made from skins of sheep and goats,\textsuperscript{48} skins of asses and horses were used to make seagreen leather (Kimukht).\textsuperscript{49} In Kanpur, crocodile and iguana alligator skins were used to turn out ornamental boxes, trunks and bags. The North West Tannery Co. specialized in such leather.\textsuperscript{50}

**Extension of Markets**

The markets also witnessed large expansion. The earliest system of marketing was barter, i.e., exchange of commodities for which payments were made in kind. The surplus was sold at the village *haats* which were periodic markets held in villages. The development of fairs (*melas*) and weekly markets (*haat/bazaars*) were the landmark in the field of rural marketing. These *haats* were the centre of economic, social and cultural activities of rural life of the people. Corresponding to the rise in demand of leather, the markets too grew in size. Hapur, Kanpur and Chauri Chaura emerged as the major hide markets in UP. These markets were fed by smaller markets at the block level where the flayers sold their hides to the agents from big markets. Large tanneries located in Kanpur purchased the hides from these three primary hide markets besides the smaller weekly markets. As the tanning activity was

\textsuperscript{47} Q.H. Farooque, *Small Scale and Cottage Industries as a Means of Providing Better Opportunities for Labour in India*, (Aligarh University Pub., 1957-58) p.43.


\textsuperscript{49} District Gazetteers of United Provinces of Agra and Oudh, Bareilley, Vol.XIII, p.68.

centralized in Kanpur, there was an outflow of finished leather to various centres. The major exporters Messers Schroder Smidth and Co., Messers Smidth Saunders and Co., Messrs Stein Forbes and Co., carried out their trade from the neighbourhood of Idgaah at Benijhabor road. Transport of hides was generally by rail. Hides were also brought by carts from neighbouring districts or by pack animals from the interiors of Kanpur district. The sale was effected through commission agents. In Kanpur city there were two big markets for hides in the Himranpurwa area. Phoolwali gali was meant for sale of leather cutting, country tanned hides and skins, while Penchabagh market was held on Mondays and Friday where country tanned and raw hides were transacted. With the increase in demand for leather goods the market expanded rapidly. The hides from Kanpur were exported to the U.S., England and Europe and many other countries.

Marketing played a very vital role in all the three sectors of the leather industry-the raw hide collection, tanning and leather manufacturers especially footwear. It was in the tanning sector that major expansion took place. Kanpur dominated this sector of leather making. The tanned leather was sorted, and graded and sent back to the Central Market where it was sold on basis of measurement. Many of the large concerns in Kanpur which had taken to trade had their outlets in a number of cities especially the port towns of the country.

Social Implications of Technology

Along with the economic changes that were observed with the advent of capital, the industries also witnessed social consequences. Earlier all functions were performed by members of a particular caste, in this case the Chamars in eastern U.P. and Jatavs in the western. Now the entire leather industry was divided into three sectors, the carcass collectors and flayers, tanners, and manufacturers of leather goods. Corresponding to this the social stratification of the leather workers took place and the flayers, the tanners and the shoe makers viewed themselves in an ascending order of hierarchy. A

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family working on finished leather considered itself of higher social status than the one who flayed carcass. In many places there was an exodus from the occupation of flaying because people socially ostracized those who engaged in flaying. This occupational differentiation was aided by the basic restructuring of the entire sector during the British period. Another important feature of the restructuring was the entry of Muslims into the industry in a big way. Since they had no social taboo and were already engaged in the slaughter business, they moved to flaying and tanning, seizing the opportunity created by the growth in leather sector. Most of the early native entrepreneurs were Muslims. The growing involvement of the Muslims is reflected in the number of students who enrolled in the Leather Working School, started in Kanpur in 1916. Of the 43 students enrolled in 1918, 31 were Muslims, 8 Christians, one Brahmin and only 3 belonged to the shoemaker class.

These exporters purchased hides locally from the beoparis or through arthatias and also imported them from other places. The arthatias or commission agents stocked the hides that were deposited with waiting to be sold. The beoparis purchased skins and hides locally after cleaning and drying them; they disposed them to the larger dealers or manufacturers who were located in different quarters of the city – Farrash Khana, Pechbagh, Cooly Bazar, Beconganj and Chotta Butcherkhana.

The State Aid

For any industry to develop, the Government policy plays a very important role. For an industry which had switched over to large-scale production to meet the requirement of the state, this role was bound to be very crucial and decisive. This found manifestation in a number of ways, starting from capital investment to the securing of markets in the initial phases.

In the second phase the Government with its tariff policies helped the industry to tide over the bad phases - periods right after the Wars and the

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53 Industries Department, United Provinces, Annual Report, 1919, pp.20-21.
great depression. These policies helped the nascent industry to face the foreign competition.

Thirdly, the Government helped the industry by encouraging the introduction of technology. Besides opening research institutes, and technical schools, the Government helped the village artisans by setting up demonstration tanneries in many districts.

Now we shall look into the progress of this industry during the period of our study and the assistance it received from the Government at various stages. In the previous chapter we have already seen how the European capital dominated in the Kanpur leather industry. Caste restrictions forbade upper-caste Hindus to take up this work and invest capital. Once these European firms had started successfully, the Indians were also attracted to this industry. The figures of the leather school in Kanpur speaks volumes of this transformation. In the school the students in general belonged to respectable classes. Of the batch of 45 students in 1919, none belonged to the lower caste, while 38 were Muslims, 3 were Christians 2 were Brahmans and one each was a Eurasian and a Parsi. The majority of 14 who passed out in 1919, were averse to following it as an occupation. They wanted to start small business on their own account. Two students started a shop on the Mall Road in Kanpur under the name “Kureel Bros”. This venture proved very successful. Another student started a shop in the city specialising in making trunks, suitcases holdalls and miscellaneous articles. Employing a number of workmen, he built up a substantial business for himself in a short time.54

According to the annual report of the Department of Industries, the Government of United Provinces, a number of small capitalists took to the manufacturing of boots and shoes for military requirements of the Government. It further stated that the tanning factories had improved a lot and that new ones were started throughout the provinces.55

55 Industries Department, United Provinces, Proceedings, March, 1919, File no.24, 1919.
The next stage in the Government assistance was marked by the protection of the industry with tariff policies. After the establishment of the first leather concern in Kanpur, the industry made rapid progress from an industry exporting the raw materials in the form of raw hides and skins to one which first started exporting the hides in a semi-tanned state to concentrating on production of leather goods in the country itself. For an industry for which the major consumer was the state, it was in the interest of the Government to ensure its development. The hide export trade was very important, ranking fifth in value after jute, cotton, food grains and seeds.\textsuperscript{56} In this export trade, the United Kingdom took the greater part of the tanned skins. These skins were sent to London and disposed off at the public sales held at intervals of one to two months. In case of raw skins, America had the largest share, importing 75 percent, while 10 percent went to England, 7 percent to Holland and 5 percent to Belgium. These skins were turned into glace kid of which England imported a considerable proportion. In case of buffalo hides again major portion of tanned hides went to Great Britain while, in the ox and cow hide trade by far the most important branch of the hide and skin exports of India, the monopoly was in the hands of Germany. This was very significant considering that till 1872, the entire shipment of this variety of cow hides went to Great Britain. This figure was reversed by the beginning of the war when Germany captured the market.

To protect this trade the German Government imposed an import duty on leather of 6 percent in 1876-77 which was raised to 10 percent in 1878, and it was further increased in 1906. Within India also this raw hide trade was very well organised. The German firms in Calcutta banded themselves into an association or ring which was exclusively German. In 1913 this ring had 30 German partners. Corresponding to this ring in India, there existed in Germany a Tanners Association in Germany and a Dealers Association in Hamburg. The two organisations worked together. This ring dominated the

\textsuperscript{56} Henry Ledgard, "Indian Hide and Leather Trade", Department of Commerce and Industry, Trade after War, (Hides, Skins and Leather Branch), GOI, December 4, 1918, p.275.
hide trade to such an extent that the hide classifications were made to suit the German tanners. German ships carried the hides direct from India to German or Austrian ports.\footnote{Ibid., p. 280.} The control of the German firms is clearly evident from the following figures.

Table 2.1: Exports of Raw Hides from India, 1917

<table>
<thead>
<tr>
<th>Year</th>
<th>To British Empire</th>
<th>To Germany and Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1907-08</td>
<td>159,183</td>
<td>1,702,407</td>
</tr>
<tr>
<td>1908-09</td>
<td>138,681</td>
<td>1,780,736</td>
</tr>
<tr>
<td>1909-10</td>
<td>217,675</td>
<td>1,962,151</td>
</tr>
<tr>
<td>1910-11</td>
<td>141,217</td>
<td>2,169,987</td>
</tr>
<tr>
<td>1911-12</td>
<td>220,030</td>
<td>2,433,211</td>
</tr>
<tr>
<td>1912-13</td>
<td>335,576</td>
<td>2,589,578</td>
</tr>
<tr>
<td>1913-14</td>
<td>221,797</td>
<td>3,273,454</td>
</tr>
</tbody>
</table>

Source: File No. 483/1915, Industries Department, Govt. Of United Provinces, October 1917.

The hides were mainly sent to Hamburg and Bremen which were the distributing centres for the various districts in the European continent. The reason for this trade passing from United Kingdom to Germany was, for one United Kingdom did not have enough tanning materials, while the continent of Europe possessed fairly abundant supplies of tanning materials. These countries admitted raw hides free of customs duty but they placed an import duty of about 15 percent on tanned or half tanned leather. Secondly, the United Kingdom could not produce leather at the rates of that in the European countries. Finally, most of the hides exported from India were not suited to the English trade, while they were suitable for continental use. The British tanners thus could never take complete assortment of raw hides in the Indian market. The German buyer on the other hand bought everything and sorted out the purchases subsequently to suit the various continental markets. These were imported into their country duty free and tanned with cheap tanning

57 Ibid., p. 280.
materials. Dealing with large quantities they were able to produce them at lower price.\(^{58}\)

The First World War which increased the requirements of the army brought to the attention of the British Government this important trade. First, steps were taken by the Government to check the trade in raw hides. Using the ‘Hostile Foreign Trader’s Order’ it ordered the liquidation of four German firms, which were a part of the German ring. There was pressure from the British firms and official in the industries department to put an end to this trade. The Government imposed a 15% duty on the export of raw hides with three purposes one, for the protection of the Indian tanning industry two, for the diversion of Indian hides from Germany to the British Empire and third for revenue purposes.\(^{59}\) As a result the trade with Germany came to an end by 1915-16.

Table 2.2 : Value of Raw Hides Shipped from India, 1913-16

<table>
<thead>
<tr>
<th>To</th>
<th>1913-14</th>
<th>1914-15</th>
<th>1915-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany and Austria</td>
<td>3,273,454</td>
<td>1,164,489</td>
<td>--</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>165,679</td>
<td>570,133</td>
<td>436,254</td>
</tr>
<tr>
<td>United States of America</td>
<td>697,804</td>
<td>846,235</td>
<td>1,499,626</td>
</tr>
<tr>
<td>Italy</td>
<td>563,063</td>
<td>384,209</td>
<td>2,194,579</td>
</tr>
<tr>
<td>Other countries</td>
<td>93,826</td>
<td>158,479</td>
<td>156,743</td>
</tr>
</tbody>
</table>


Once the enemy market was cut of the Indian hides were utilized to meet the war requirements of the British Government, thus strengthening the control of the Government over this trade.\(^{60}\) End of the war was bound to affect the industry which was preoccupied with making war material. Since the start of war their output of leather and leather goods had been taken up

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\(^{58}\) Report by A.H. Silver, Director of Industries, U.P., 1917.

\(^{59}\) Industries Department, United Provinces, Proceedings, Vol.43, July 1928, p.23.

\(^{60}\) Industries Department, United Provinces, Proceedings, March, 1920, File no.533/1919, p.18.
entirely by the Government. Therefore steps were required to resuscitate the trade which had stopped during the war.

**Technical Assistance**

With the end of War the Government encouraged the native manufacturer to take up production of chrome and semi-chrome leather of higher grade for civilian boots and shoes. As the native capitalists were short of capital and the necessary machinery the government gave assistance to all the firms which were taking up production of leather articles in the country. In one such case priority, assistance was given to Messers Skippers and Co. to import machines for the manufacture of roller skins in Kanpur which till then were chiefly imported into the country. In another case, the Government recommended the passage for three expert tanners required by Col. Norrie, an English officer who proposed to set up a new tannery at Poona. In his letter the Secretary of State for India stated, "The government wanted to encourage the importation into this country of experts in tanning and would do anything to help him (Col. Norrie)".

The greatly increasing demand by the shoe manufacturing industry in all parts of the world for chrome tanned leather glace kid and reptile leather prompted the Government to take steps to encourage this segment. As the Indian industry did not have the required capital to take up experiments with the new tanning agent the Government took the initiative by setting up a chrome factory in Madras. In the United Provinces, orders as to the measures to be taken towards the wider use of chrome leather in Government departments and towards the establishment of a chrome leather factory in the province were issued in 1907. It was felt that before the factory was established it would help to know the usefulness of chrome leather in the province. Therefore, it was decided that this leather would be used for boots for Government servants who were supplied with uniform boots and for water

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61 *Industries Department, United Provinces, Proceedings, March, 1917, File no.24/1913, p.23.*

62 *Department of Commerce and Industry Trade After War (Hides, Skins and Leather Branch), GOI, Proceedings, No.5, May, 1920.*

55
bags for the wells on Government farms. The departments were asked to keep records of the durability of this leather in comparison with bark tanned leather. Orders were issued to the Inspector-General of Police, Inspector-General of Prisons, Director of Land Records and Agriculture, Superintendent, Government Press and Post Master General, United Provinces. Encouraged by the Government initiative, Messrs Cooper, Allen and Company, the North West Tannery Company and a number of small leather workers in Kanpur, took up manufacture of boots and shoes, using chrome leather.

For the leather concerns in Kanpur which were all working over time devoted to the production of war materials, the shortage of tanning materials was natural. As these concerns depended on babul bark, the Government made arrangements to procure this raw material. The Secretary to Government, United Provinces, Mr. A.W. Pim, sent orders to all the district officers in the Provinces, to help the industry. He wrote "... there is a serious shortage in the supply of babul bark, which is now needed in large quantities... at Cawnpore for tanning work for Army purposes. The Lieutenant Governor therefore asks that you will give the matter your special attention and afford Messrs Cooper Allen and Company, Cawnpore, every facility which your experience can suggest for the purchase of babul trees on a large scale. His Honour would also be glad if you will inform that firm of any substantial babul areas in your district, and will help them in negotiating with the owners, explaining to the latter that the bark is needed for military purposes, such as boots, saddles and all leather accoutrements, and that they will be indirectly assisting Government by making it available at current market price".

Similar orders were sent to Secretary to the Board of Revenue, Director of Land Records and Agriculture, Chief Conservator of

63 Industries Department, United Provinces, Proceedings, Feb. 1909, file no.518/1908, pp.43-49.
64 Ibid., p.51.
65 Industries Department, United Provinces, Proceedings, January 1916, file no.483/1915, p.21.
Forest, Public works Department.\textsuperscript{66} Steps were also taken to grow babul in large tracts, especially in areas around Kanpur. Efforts were also made to cultivate Cassia Auriculata, a better tanning agent found in South. Railway, Canal and Agriculture departments in United Provinces took up the cultivation of this tanning agent. This was necessary as the tanning of East India Kips (semi-tanned leather) for exports was confined to areas in which Cassia Auriculata was available. The future of this trade depended on the supplies of this valuable tanning agent at cheap prices. The cost of railway freight made tanning with this substance commercially unprofitable in the United Provinces.\textsuperscript{67}

### Research Institutions And Other Forms of Government Assistance

To aid the industry further with respect to new tanning agents, which would produce better leather, the Indian Munitions Board entered into an arrangement with the Esociet Company at Maihar in Central India, by which it took over the experimental tannery and the staff employed on research work. To ascertain the commercial value of the conclusions reached in the research factory, the Board purchased a tannery in Allahabad.\textsuperscript{68} The results were then transmitted to all the major leather concerns.

A leather working school was established in Kanpur in 1916 to train the natives in various aspects of leather manufacture. The whole system of instruction in the school was based on sound and practical lines which aimed at producing efficient and high class workmen. The students were also taken to large leather concerns to familiarize them with the latest developments in the industry.\textsuperscript{69} This school, the first of its kind in the United Provinces, attracted students from other districts also. To stimulate the growth of small

\textsuperscript{66} Ibid., pp.23-25.

\textsuperscript{67} Industries Department, United Provinces, Proceedings, March 1920, file No.533/1919, pp.18-19.


\textsuperscript{69} Industries Department, United Provinces, Proceedings, March 1920, file no.533/1919.
tanning factories in districts, a scheme was framed for starting a tanning school at Kanpur with the object of training workmen in the methods and processes of tanning which could be applied to the cottage industry.\textsuperscript{70}

As the faulty flaying methods and branding led to a loss of valuable leather, the Indian Munitions Board called the attention of the local government to take steps to check it.\textsuperscript{71} The industries department came up with a special scheme for the improvement of raw hide industry in the Provinces. The scheme aimed at improving the methods of flaying, curing and preservation of hides and their packing before dispatch. One demonstration party under an expert currier and two \textit{ustaad} flayers visited many slaughter houses in Kanpur, Agra and other districts to instruct the artisans. To improve village tanning three demonstration centres were started. Model village tanneries were started in Gangua Khera (Unao district) and Raniwa (Fyzabad district). Here experts gave demonstrations in improved tanning methods.\textsuperscript{72}

The opening up of markets was coupled with a change in preferences among the people. The Indian population took to the use of European style footwear, which were beyond the native artisans. In the 1930's when the market was already undergoing a bad phase as a result of the general depression all over, the leather industry received another blow in the form of cheap rubber shoes and chappals from Japan and Czechoslovakia which flooded the Indian markets. In December 1932 the imports of Japanese footwear were estimated at 2,000 pairs per day. Even the Bata outlets from Calcutta affected the Kanpur industry. Special legislation was enacted in April 1933 to enable Government to deal with the situation. Tripartite negotiations between the representatives of Indian-Japanese and British interests were held in December 1933.\textsuperscript{73} Change in preference was also witnessed in the most important item for which leather was required in India.

\textsuperscript{70} Industries Department, \textit{United Provinces, Proceedings}, March 1925, Feb. 499/1924.

\textsuperscript{71} Industries Department, \textit{United Provinces, Proceedings}, March 1920, file no.533/1919, p.19.

\textsuperscript{72} Industries Department, \textit{United Provinces, Proceedings}, April 1938, file no.671/1938.

\textsuperscript{73} Industries Department, \textit{United Provinces, Proceedings}, March, 1934, file no.558/1954.
the water bag by which water was lifted from millions of well for irrigating the fields. The rise in the price of leather led the riots to use light iron buckets, which were also preferred for their durability.\textsuperscript{74} To help the leather industry, the Government encouraged to venture into production of articles which were till then imported from other countries. One such effort was the production of roller skins which were required in large numbers by the cotton mills. During the war the Government encouraged its production within the country. As a result of these efforts the first roller skin factory was established in Kanpur in 1919 by Messrs Skipper and Co. The firm received priority assistance in importing its machines.\textsuperscript{75}

Encouragement was also given to the manufacture of picker bands, which were used in jute and cotton mills, leather belting and raw hide pickers. To encourage these new ventures the Munitions Board informed the Indian firms that if they could satisfy it by producing suitable samples of these articles then the priority applications for import from abroad would be refused. Experiments were conducted by the Government to help these ventures.\textsuperscript{76}

While the first step in the transformation of the industry was marked by the movement of the industry from the rural areas to the cities. The introduction of the latest machines and technology was responsible for the complete transformation of the industry. The state policy in the form of Government aid, tariff protection and technical assistance were major factors contributing to the rapid cross over from rural craft to modern factory production.

The large scale mechanization affected all aspects of the traditional leather craft. It shook the roots of the Jajmani setup in which the artisan was assured of both the raw material and market. The factory introduced a

\textsuperscript{74} Thomas Holland, “The Development of Indian Tanning Trade”, \textit{Indian Industrial Commission}, 1916-18, p.62.

\textsuperscript{75} Industries Department, \textit{United Provinces, Proceedings, March 1919}, file no.24/1913, p.23.

\textsuperscript{76}Thomas Holland, “The Development of Indian Tanning Trade,” \textit{Indian Industrial Commission}, 1916-18, p.58.
complex form of production, where the industry was divided into three sectors; the carcass collection, tanning and leather manufacture all of which were vertically linked. In the new economic setup the rights of the Chamars were questioned. Now a new set of contractors or agents emerged who moved in the rural areas for collection of hides. New interlinkages were now formed, at the top of which was the factory owner in the city, followed by the wholesale hide merchant also in the city and the primary contractors in the villages. These strong social and community interlinkages made it difficult for others to enter the trade.

The slaughterhouses which had emerged during the period to meet the requirements of the meat trade with Burma, had a direct influence on the leather industry. The leather industry no longer had to depend on the fallen cattle, these slaughter houses helped the growth of the industry both in terms of the quantity and quality of the hides. Slaughtering also encouraged people from other castes, especially the muslims to enter this segment of the industry in a big way, a dominance which continues till date.

The emergence of the large urban centres led to a substantial change in the political economy of the leather industry. The traditional villager flayer who till this time had total control over the most vital raw material for this industry was the most disadvantaged. The trade in the face of competition in the form of the dealers and contractors was so biased against him that he was left with few options as a result of which most of them sort employment in the factories in the cities. The rapid transformation taking place in the international leather industry further weakened the position of the village leather worker, who did not have the means to adopt the latest technological innovations. The large factories of Kanpur on the other hand were protected by the Government aid both in form of contracts and assistance in importing the latest machines and technology.