Global demand for leather, leather products and leather footwear is worth approximately $215 billion a year. However, as leather is capable of being replaced by other materials such as synthetics, the industry competes by promoting luxury and quality products—both aesthetically and functionally.

Every year, the global leather industry slaughters more than one billion animals. Leather products are sourced from the skins or hides of a variety of species such as the cow, pig, goat, sheep, deer, ostrich, kangaroo, crocodile, buffalo, snake, eel and stingray. Approximately 65% of leather is produced by cows, 15% sheep and 11% pigs. Some of the most expensive leather products include Louis Vuitton leather bags and Hermes crocodile bags.

In developing countries such as Bangladesh, the leather industry is a source of exports, employment and economic growth. However, deep below the skins and hides lies hidden dangers such as lax environmental laws causing water, air and soil pollution, violations of human rights and child labour.

Bangladesh’s leather exports
From the 1970s Bangladesh experienced a steady growth in the leather industry. By 2015 the industry had evolved into the second largest export sector, playing an important role in generating foreign exchange and employment for the poor developing country. About 95% of Bangladesh’s leather and leather products are sold overseas, mostly in the form of crushed leather, blue wet leather, finished leather, leather garments and footwear. At least 90% originates from the Hazaribagh area, located in the capital city of Dhaka.

Bangladesh exports leather and leather products to 53 countries such as China, France, USA, Germany, Italy, South Korea, Netherlands and Vietnam. In 2017 Bangladesh aims to export $1.22 billion of leather and leather goods, focusing on high-quality ‘Bengali black’ leather demanded by European leather manufacturers.

Bangladesh footwear and leather goods export trends

Bangladesh Leather

Unsustainable production – decline in exports
During 2014–2015, publicity surrounding the hazardous polluting tanneries and employment of child labourers, saw a decline in leather exports from Hazaribagh and Bangladesh. The European Union warned it might discontinue sourcing leather from Bangladesh if environmental compliances were not guaranteed.

Towards sustainable production
Even though Bangladesh, exports only 0.5% of the global leather market, it has the potential to expand its market share if it adopts an eco-friendly and socially responsible production system. Quality and clean sustainable production of leather is no longer a choice but an essential requirement for the survival of leather manufacturing in Bangladesh. Optimistically, the leather sector aims to prosper when polluting tanneries relocate from polluted Hazaribagh area to the new, environmentally compliant industrial zone at Savar.

Overview: leather industry in Bangladesh
Bangladesh’s leather industry connects poor villagers to wealthy urbanites and combines traditional practices with modern technologies. It is ideally suited to produce leather goods with its abundance of cheap labour and natural resources (animal skins).

Characteristics
Bangladesh’s leather industry possesses the following characteristics:

- 110 export oriented factories manufacture leather footwear
- 35,000 leather firms including 110 large firms
- Direct and indirect employment of 850,000 people
- 70% of the workforce are women
- 56% of the leather is sourced from cows, 30% from goats and the remaining from buffalo
- Companies that source leather from Bangladesh include Hugo Boss, Armani, Timberland and Hush Puppies
- Only 15%–18% of total leather supplies is required to meet domestic demands
- 76% of tanneries are export orientated
- Apex Footwear is the largest footwear exporting company
- Exported products include shoes, bags, wallets, belts and finished leather
- China, Vietnam and Brazil are three giant leather exporting countries. These countries are shifting away from leather production due to high labour costs e.g. labour costs in Bangladesh are 1/5th of China’s labour costs and 1/2 of India’s. This advantage opens up massive opportunities to expand Bangladesh’s leather exports that is anticipated to become a $15billion sector within a few years.

Challenges
Bangladesh’s leather industry faces numerous challenges such as:
- Irregular power supply
- Requires modernisation of the leather production process
- Inadequate R&D facilities
- High interest rates and limited access to finance
- Vulnerability of small enterprises
- Political instability

Hazaribagh area, Bangladesh
Leather, a ‘farm to fashion’ product, originated in Bangladesh in the 1940s, when the first tannery was established at Narayanganj. By the 1960s tanneries had moved to the Hazaribagh area as it was:
- Located outside the city
- Near the river
- Uninhabited
- Designated as an industrial area

However, over time the number of tanneries grew exponentially and Dhaka’s population expanded and spread to Hazaribagh. Today the leather industry is heavily concentrated in the Hazaribagh area possessing 150 tanneries out of the 220 tanneries in Bangladesh. The narrow streets, limited sewage facilities and toxins generated from the leather industry have adversely affected aquatic and human lives. On the other hand, the concentration of small industries offers benefits such as shared knowledge and raw materials, and development of vertical and horizontal integration of businesses.
Bangladesh Leather

Stream drainage from Hazaribagh tannery area – different scales of maps

Characteristics of Hazaribagh’s tanneries

Size
Ranges from small scale cottage operations hiring a dozen workers to large businesses such as the Bengal Leather Complex employing 500 men

Workers
Registered workers 25,000
Unregistered workers 30,000
More people are employed following the annual festival of Eid-al-Adha, the Muslim Sacred Festival

Push and pull forces
Rice farmers migrated to leather factories ‘pushed’ by poverty and ‘pulled’ by prospect of a better quality of life. Poor unskilled workers are forced to work 14 hours a day, 7 days a week, to merely survive

Union and associations
Labour union represents 25,000 members who work in tanneries
Bangladesh Finished Leather, Leather Goods and Footwear Exporters’ Association represents tannery owners

Production methods
Many use old, outdated and inefficient processing methods
Hazaribagh one of world’s most polluted places

Hazaribagh means ‘a thousand gardens’. However flowers no longer survive as the city is ranked among the ten most polluted places on Earth. The city’s smell is a mixture of rotten eggs and meat and acrid ammonia. In the gutters lay animal hairs and skins. Men with poles over their shoulders carry black chemical wastes in open tins through narrow alleys.

World’s most polluted places

Leather production process

- Animal slaughter
- Removal of raw hide skins from animals. Waste is produced
- Cleaning of hides – removal of dung, hair, fats
- Tanning – preservation of hide by treatment with products e.g. chromium salt
- Colour (dyes) and softening and filling agents to produce final articles – upholstery, footwear
- Finishing – coating (lacquer, wax) to enhance aesthetic properties

Leather supply chain – production to consumption

- Production process
- Manufacturing
- Distribution
- Marketing and sales
- Consumption – local and overseas buyers

Photo Story – Hazaribagh leather processes

Child jumps on leather waste used to make poultry feed at Hazaribagh

Source: http://s1.reutersmedia.net/resources/r/?m=02&d=20121009&t=2&i=661612658&w=&fh=545px&fw=&ll=&pl=&sq=&r=CBRE8981DU+E00

Raw hides soaked in lime and sodium sulphide to remove hair and fat.

Source: https://undark.org/article/leather-tanning-bangladesh-india/
Steel drums filled with toxic chemicals like chromium, used to tan leather. 
Source: https://www.wired.com/2017/01/adib-chowdhury-a-thousand-polluted-gardens-inside-bangladeshs-polluted-billion-dollar-leather-industry/#slide-12

Young child working around deep, open vats of tanning chemicals. The child stirs hides soaking in chemical bath. 
Source: https://undark.org/article/leather-tanning-bangladesh-india/

Tanneries in Hazaribagh dump wastewater into ditches that empty into open canals. Here, a worker carries buckets of waste from a tannery. 
Source: https://undark.org/article/leather-tanning-bangladesh-india/

Most tannery employees face unhealthy conditions. Here, a worker stands knee-deep in a soaking solution. The hides are then hung overhead to dry. 
Source: https://undark.org/article/leather-tanning-bangladesh-india/

Inside Hazaribagh tanneries, child workers exposed to hazardous machinery. Here, a 10-year-old boy named Joey pulls leather from a smoothing machine. 
Source: https://undark.org/article/leather-tanning-bangladesh-india/

Villagers dry leather from the factories. 
Source: https://www.wired.com/2017/01/adib-chowdhury-a-thousand-polluted-gardens-inside-bangladeshs-polluted-billion-dollar-leather-industry/#slide-7
Bangladesh Leather

Open sores and peeling skin are common among workers who handle tanning chemicals without gloves. Some say their hands become so stiff that they cannot open their fingers unless their skin is wet.

Source: https://undark.org/article/leather-tanning-bangladesh-india

Dark side of Bangladesh’s leather industry

WATER POLLUTION – discoloration of water and toxic chemicals.
One tonne of hide leads to:
- a. 20m³ – 80 m³ of wastewater
- b. chromium levels of 100 – 400mg/L
- c. sulphide levels of 200 – 800mg/L
- d. high levels of fat
- e. pathogen contamination

Runoff from feedlots creates water pollution

Water quantity – large quantities of water consumed in production process

WORKERS AND COMMUNITIES – any die from cancer caused by exposure to toxic chemicals used to process and dye leather

SOIL POLLUTION – flesh, hairs, waste

AIR POLLUTION – ammonia gas, hydro sulphuric gas

BIODIVERSITY DECLINE – cancer and deaths throughout food chain

WASTE – 600kg of waste for each ton of wet salted hides

CHEMICALS – heavy use of chemicals in tanning process (chromium, formic acid, mercury)

CHROME TANNING – high levels of contamination, 90% of leather is chrome tanned. Tanning process strains water treatment plants

Most workers stood barefoot in chemicals on the tannery floor, waded into tanks filled with tanning solutions, and climbed into drums to retrieve the wet blue leather, literally bathing themselves in a soup of caustic and potentially toxic chemicals. Young boys carried water and hides and operated stretching machines, while smaller children tended pieces of leather soaking in open vats.

Source: https://undark.org/article/leather-tanning-bangladesh-india/

Imagine if you worked in a poorly ventilated room, standing in a tub of toxic chemicals for 12 hours a day? These harsh conditions are what thousands of Bangladeshi locals go through every day, to earn small wages that are barely sufficient to feed their families. Yet, the world continues to consume leather products that Bangladeshi tanneries produce.

So, before you think about purchasing a leather jacket, consider the human and environmental costs.

Source: https://www.trustedclothes.com/blog/2016/02/23/24811/
Bangladesh Leather

Tanning process-chromium

Tanning is the process of treating skins of animals to produce leather. For the past hundred years, chrome tanning has been the dominant method of making leather. Without water treatment plants and sustainable management policies, chromium used in leather tanning changes the hydrosphere, atmosphere, lithosphere and biodiversity.

In Hazaribagh, chromium waste seeped into the soil and contaminated groundwater that provides drinking water to nearby communities. In addition, contaminated water has bio accumulated in aquatic species – a source of food.

In other countries, environmentally concerned tanning industries have converted to vegetable tanning and constructed water treatment plants.

Compare chrome tanning with vegetable tanning

* chrome tanned skins are called wet blue

<table>
<thead>
<tr>
<th></th>
<th>CHROME TANNING</th>
<th>VEGETABLE TANNING</th>
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</thead>
<tbody>
<tr>
<td>% of leathers in world</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Ingredients in tanning</td>
<td>Chemicals-acids salts</td>
<td>Natural ingredients-bark</td>
</tr>
<tr>
<td>Time to produce</td>
<td>1 day</td>
<td>20-40 days</td>
</tr>
<tr>
<td>Production method</td>
<td>Mass produced</td>
<td>Hand-skilled craftsmen</td>
</tr>
<tr>
<td>Cost</td>
<td>Cheap</td>
<td>Expensive – high cost process</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Unsustainable, breaks easily</td>
<td>Sustainable, durable, strong</td>
</tr>
</tbody>
</table>

Chromium tanning produces toxic chicken feed

*This murky toxic feed chain must be stopped.*

Chicken, a staple food in the Bangladeshi diet, is frequently fed tannery scraps. In Hazaribagh, tanneries generate 100 tonnes of tannery scraps a day that are processed into chicken feed, by about 60 legal factories in Gazipur and Dhaka districts. Daily, these factories produce up to 30 tonnes of feed for poultry.

The demand for tannery scraps across Bangladesh is overwhelming, because it is cheap and chickens grow faster on scraps compared to other supplements. Originally tannery scraps were dumped in the Buriganga River but are now sold to factories to produce poultry feed. A report found high levels of chromium in the bones, brains, and muscles of chickens. The Bangladesh Council of Science and Industrial Research (BCSIR) found chromium enters the food chain when tannery scraps are fed to chickens, and then eaten by humans. Research found it led to cancers, liver cirrhosis and kidney damage.

As a result of the report, chicken-feed producers ceased using tannery scraps but unregistered and illegal factories continued to thrive on tannery scraps. Poor locals persist in boiling tannery waste to feed household poultry.

**Boiling tanned leather off-cuts in Hazaribagh. First step to manufacture poultry feed.**

Photo source: Rashed Shumon http://www.thedailystar.net/chickens-eggs-made-risky-33389

A worker boils animal parts left over during the leather tanning process to be made into poultry feed. Photo by Kamrul Hasan Khan

Bioaccumulation of chromium from tannery scraps to humans

CHROMIUM SALT
- Tannery (wet-blue leather)
- Tanned leather dust
- Poultry feed
- Chicken

HUMAN BODY

Tanneries affect water-sources and downstream communities

Globally, the majority of businesses in the tannery industry use environmentally appropriate pollution controls that do not expose local communities to health risks. However, for over half a century the Hazaribagh tannery industry has operated without a waste treatment plant. Wastewater and solid wastes from tanneries, containing sulphuric acid, chromium, lead and animal flesh, find their way into surface water, where toxins are carried downstream. The contaminated water is used by communities for bathing, cooking, swimming and irrigation. The pollutants then enter the Bay of Bengal where prawns are farmed for export.

A study revealed that Hazaribagh tanneries generate 7.7 million litres of liquid toxic waste and more than 88 million tons of solid waste in the form of raw hide scraps, flesh and fat, that are released into the Buriganga River, daily. The river, once the main source of drinking water for Dhaka, is regarded unsafe for human use, especially during the dry season.

Working in tanneries impacts on short and long term health

Studies show a causal relationship between tannery pollution and poor community health. There appears to be a higher prevalence of diarrhoea, skin, respiratory and eye problems in Hazaribagh compared to neighbourhoods with similar socio-economic characteristics.

SHORT TERM
- Sulfuric acid and sodium sulphide burns skin, eyes and respiratory tract
- Discoloration, peeling skin
- Body aches
- Dizziness and nausea

LONG TERM
- Cancer higher among children working with chemicals
- Disfiguring and amputated limbs from chemicals
- Chemicals such as formaldehyde and pentachlorophenol are carcinogens-can cause respiratory diseases after years of exposure
- Death – 90% of people who work in tanneries have a life expectancy of 50 years

Child labour and its impacts

Bangladesh’s three main associations involved with leather production declared that ‘no child labour is employed in the leather sector’. Despite this declaration researchers observed children working in the industry. For example:
- National Child Labour Survey found 13,702 children between 5 and 17 years old working in the tanning and manufacturing of footwear and leather goods. 
Bangladesh Leather

- **Human Rights Watch** interviewed ten children, some as young as 11, working in tanneries. Many children work 12 or even 14 hours a day, considerably more than the five-hour limit for adolescents in factory work established by Bangladeshi law.

The majority of working children migrated from the countryside as a consequence of push factors such as family poverty, debt and loss of land. Most children work in small-scale and informal enterprises that generally produce low quality products for the local market. It is rarer to find children employed in large-scale enterprises that focus on exported goods. However, distinctions become blurred, as bigger factories outsource most of their work to smaller factories and home-based workers.

### Role of children in leather production
- Production of leather e.g. tanning process
- Toggling or drying leather by pagging it to the ground. Children are paid per unit of leather and some work from 5am to 2pm.
- Processing waste material and by-products (meat, bone, scrap leather)
- Manufacture of leather items e.g. sewing
- Sale of leather and leather items to local market, shoe shops and shopping centres

### Education versus work

The majority of working children in the leather sector do not receive an education, while others try to combine the difficult task of work with school.

"Sharing a wall with one of the huge Hazaribagh factories are the crumbling rooms of the Taj Mahal Tanneries district high school. A teacher Mohammed Yusuf, says a third of the children in his class of 13–15-year-olds work in the tanning factories. "They do the night shift and then come here. They have all sorts of health problems: they don't understand things and they fall asleep in class." He thinks the government should close the factories but says they won't."


### Eid-al-Adha and child labour

Religious festivals such as Eid-al-Adha generate increased demand for meat and new shoes. This evolves into employment opportunities for children such as working in slaughterhouses, transporting hides and skins, and preparing hides and skins for sale. During this period workers earn less per hide than during the rest of the year, but are able to prepare more hides per day.

During Eid-al-Adha, 1–1.5 million cow hides and 2 million goat hides arrive in Bangladesh to be slaughtered. For 10–15 days, storehouses are crowded with workers, some are young children.

In 2016 at Eid-al-Adha, rain fell in Dhaka causing the streets to turn red when rain was mixed with blood from sacrificial animals.

Bangladesh Leather

Personal story – working in a tannery

Jahaj who is 17 years old, has worked in a leather factory in Hazaribagh since he was 12 years old. He labours ten hours day and earns US$37 a month. Jahaj processes raw hides into the first stage of leather, known as ‘wet blue,’ which exposes him to hazardous chemicals. With his bare hands he takes the hides (which are inside a four-metre square tannery pit filled with chemicals) and throws the hides outside the pit. He performs this hazardous task that burns his skin but he continues to work, because he needs money to eat. (Human Rights Watch)

Government’s response – relocate to Savar

2009 Relocation to Savar

Amid pressures from activists and overseas buyers, the Bangladesh government in 2009, undertook initiatives to relocate Hazaribagh factories to a new leather industrial zone in Savar. The government allotted 155 plots at the 200 acre leather estate and factory owners were financially compensated for shifting their industrial units to Savar.

Once the leather industry is established at Savar, the adverse environmental impacts from the tannery industry is expected to be minimised with the construction of:

- waste-treatment facilities
- central effluent treatment plant (CETP) for treating liquid waste
- solid waste management system
- chrome recovery unit

The government and owners of tanneries agreed to build a residential area for workers along with schools and hospitals. However, progress to transfer tanneries to Savar was slow, due to both a shortage of funds and workers who protested on the move.

Construction of new tanneries at Leather Industrial Park in Savar

Photograph: https://www.hrw.org/report/2012/10/08/toxic-tanneries/health-repercussions-bangladeshs-hazaribagh-leather.jpg

Photograph: http://www.dhakatribune.com/bangladesh/dhaka/2017/04/10/tanners-nightmare-savar/
2017 Relocation to Savar

- By early 2017, 43 out of 155 tanneries had moved to Savar. However the government delayed enforcing the law to appease tannery owners and 30,000 people working in tanneries who staunchly opposed the transfer.
- By 6th April 2017, the Department of Environment (DoE), following a High Court order, demanded closure of tanneries in Hazaribagh. If the order was ignored repercussions would follow, such as: gas and electricity supplies suspended, roads blocked to prevent raw hides entering Hazaribagh, and licenses revoked for those who defied this order.

Relocation problems

In April 2017, numerous problems arose from the closure of the tannery industry in Hazaribagh, such as:
- Government and tanning owners had not completed their work at Savar. Relocation of leather units, and construction of a residential area for workers, along with schools and hospitals, was yet to be completed
- Completion of Savar was estimated to take about five months
- Factory owners did not inform leather workers whether they would be employed in the new factories in Savar
- Employees were given two options:
  1. go to Savar when production starts
  2. leave with a few months' wages

About 45,000 workers were concerned about 'how they would survive until they moved?'

Workers at Hazaribagh Tannery Mor, protesting on the government move

Flow on effects of tannery closures

- Pushcart labourers – About 2,000 pushcart labourers carry raw hide and leather goods in Hazaribagh. Pushcart labourers are only hired if there leather production occurs. About 1,200 pushcarts were left abandoned on the streets
- Businesses – . Hundreds of grocers and businesses closed due to movement of leather factories to Savar, a grocer, said his sales dropped from Tk5,000 to Tk1,000 a day
- Poverty increased in Hazaribagh
- Polluted and unproductive landscape remains and needs urgent rehabilitation
- Utilities – severing of gas, water and power meant workers and their families who lived at the leather factories could not cook meals or wash. April 8 2017, utility services were disconnected to 224 tanneries

Complicated supply chain

During, November 2016, a Datamyne Report, noted that more than a dozen fashion and shoe companies imported products made in Bangladesh. The largest of these included Michael Kors, Timberland, Hugo Boss, Puma and Gap.

Some companies and manufacturers were certain the leather used to make their products was not imported from Bangladesh. Some brands disputed the report’s findings while others were unaware of the source of their leather. In response to the Report most brands reacted by either banning Bangladesh leather or demanding improvements in the leather supply chain.

Non-government group investigated Bangladesh’s leather supply chain

Source: http://www.thedailystar.net/frontpage/hazaribagh-tanneries-workers-face-uncertainty-1389415
Diagram: https://www.apnews.com/57003bedd3ae4e3e9d1633df506effc31
Bangladesh Leather

‘Syed Nasim Manzur, managing director of Apex Footwear and director at Apex Tannery, calls Hazaribagh “an environmental disaster” and said they’ll soon close their plant there. But he said the report is a “smear campaign,” allegations of child labour are unsubstantiated, and Hazaribagh leather doesn’t end up in exported products.’

Source: http://bigstory.ap.org/article/57003bedd3ae4e3e9d1633cf50effc31/report-examines-grim-bangladesh-leather-trade-links-west

‘As Undark notes, consumers have no way of knowing where the leather in their shoes, purses or belts came from unless companies reveal their supply chains. Undark asked fashion and shoe companies, identified as importers in the Datamyne records, to reveal their supply chain.’ Timberland, Hugo Boss, Puma, Clarks, and Gap each told Undark that their companies do not use leather from Hazaribagh in their products manufactured in Bangladesh.

Towards a sustainable leather industry in Bangladesh

At present production of leather goods in Hazaribagh is unsustainable environmentally and socially. Foreign companies that import leather produced in Hazaribagh should ensure their suppliers are not violating labour, health and safety laws, as well as poisoning the environment.

Dozens of leather companies espouse ethical sourcing, and adhere to human rights and sustainable manufacturing processes. However, few disclose information detailing their suppliers.

RECOMMENDATIONS

• Ensure sufficient and continuous power supply.
• Start joint ventures with other leather exporting countries like India.
• Import advanced technology.
• Government builds facilities to increase production of finished leather goods.

OPPORTUNITIES

• Large untapped global market.
• Investment in value added leather products.
• Government policies toward leather exporters – cash incentive etc.
• International fashion houses use leather products

SUSTAINABILITY

• Trace leather process-sources.
• Construct water treatment plants.
• Improve chemical management.
• Reduce adverse environmental and social impacts.
• Consume ethical leather goods-fair trade, eco-friendly tanner.
• Stop using child and bonded labour.

THREATS

• No long term policy regarding branding and promoting. Bangladesh’s leather products.
• Political instability, corruption.
• Substandard quality of some products.
• Illegal exports of raw hides/skins
• Potential buyers, stringent compliances such as building treatment plants
Bangladesh Leather

What is being done? Active Citizenship

Today, consumers are asking whether the leather in their boots or bags was produced by tanneries that pollute environments and exposes workers to hazardous conditions.

Accountability, Traceability, Ethical Purchasing

ACCOUNTABILITY

Corporations and retailers must take responsibility for their actions. Major fashion retailers are aware of violations of human rights and environmental degradation raised by organisations such as Trusted Clothes and other ethical clothing organisations.

What can you do?
- Assess your wardrobe
- Check label tags on leather goods (shoes, belts, accessories, chairs) for where it is made.
- Check no child labour is part of its production

TRACEABILITY

Many supply chains and retailers are working to end child labour, by tracing their manufacturing process.

Next time you buy leather goods, ask: What countries process and manufacture the leather? What are their names and addresses?

What can you do?
- Tell friends and family
- Discuss social and environmental problems of the leather industry

ETHICAL PURCHASING

For companies, retailers and consumers.

Growing number of eco-friendly and sustainable retailers produce leather garments under Fair Trade.

What can you do?
- Volunteer, campaign
- Trusted Clothes, volunteers support inhumane treatment of children in Bangladesh
- Human Rights Watch

For decades the tanning industry, has hopscotched across the world, continuously fleeing stringent environmental regulations and rising labour costs. When they vacate their old location they tend to leave long-lasting toxic footprints at each stop.

The Bangladesh Ministry of Industries is working out the future of Hazaribagh and the popular idea is to convert the space into a modern residential area with open spaces, schools and play grounds. Firstly, the soil needs to regenerate in order to remove the toxic elements.

Activities

1. Describe the leather processes from animal to shoe as a TV report.
2. Leather Hunt: What are you wearing or possess that is made of leather? Select three leather items and devise a list of questions you would ask companies that produced the products you have selected such as:
   - Where is the leather produced?
   - What are the working conditions and wages for workers?
   - Are children employed along the leather supply chain? Share your responses with the class.
3. Refer to the images in the article and describe the impacts of leather processing on Hazaribagh’s environment and people.
4. Mind map the dangers lurking in the leather industry. Divide research into adult workers, children, communities and environment.
5. Compare the use of chromium tanning with an alternative tanning processes such as vegetable tanning.
6. What lines from this article made the biggest impact on you and why?
7. Which photograph made the dominant impression on you and why?
8. In groups, explain how visual literacy (maps, photographs, graphs, tables) contributes to a better understanding of the topic.
9. The Bangladesh government has been trying regulate, redevelop and relocate tanneries for many years. List the causes for the delay.
10. Research the organisation Human Rights Watch, and describe its criticisms of tanneries in Hazaribagh.
11. In pairs, investigate connections between Australian retailers and tanneries in Bangladesh. Why is this a difficult task? What did you find?
12. Postcard: In groups, select one image and one quote from the internet, required to design a postcard on the impacts of tanneries on the environment in Hazaribagh.

13. Imagine you have been hired as an advocate for the workers at the tannery in Hazaribagh. Identify three challenges workers face and how they could be resolved.

14. What is the Leather Working Group? What are its aims? How effective is the organisation?

15. What is meant by awareness, oversight and ethics in the leather industry? Why is awareness and ethics important?

16. Human Rights Watch advocate Richard Pearhouse said ‘Consumers should be asking plenty of questions on the shop floor about what retailers are doing to guarantee they are not sourcing leather from Hazaribagh’s toxic tanneries.’ Explain this statement.

17. Perspectives – an analysis of a topic requires balanced arguments.

Complete the table below noting the main points supporting and opposing closing tanneries in Hazaribagh.

<table>
<thead>
<tr>
<th>Factors impacting on tanneries</th>
<th>Reasons to close tanneries</th>
<th>Reasons to keep tanneries open</th>
</tr>
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<tbody>
<tr>
<td>Economic</td>
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<td>Human/social</td>
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</table>

18. Shoe gazing in India

India, one of the world’s leather giants, exported $5.92 billion in leather and leather goods between 2015 and 2016. Roughly 60%-70% of the country’s leather and leather goods is produced in the southern Indian state of Tamil Nadu, where many tanneries resemble those located in Hazaribagh today.

Kanpur, a small city of 2.5 million inhabitants, is located in the state of Uttar Pradesh in India. The city, home to over 300 tanneries, has self-proclaimed itself as the ‘Leather City of World,’ as it is the country’s leading leather exporter, with more than 90% of its products exported to Europe and USA.

Kanpur resides on the banks of the holy Ganges River where an ecological and health crisis has slowly developed. Huge amounts of waste water, laced with toxic and acidic chemicals such as chromium, are channelled from tanneries onto nearby farmland on the outskirts of Kanpur once called the ‘King of Roses’. Today, roses have vanished and poisonous vegetables grow.

Investigate:
- In groups investigate leather production in Kanpur. Include: leather production process, leather exports, wages, pollution (air, water and soil), environmental laws, water treatment plants, work accidents/deaths, child labour and technology.
- Draw a mind map showing the impacts of the leather industry on workers, surrounding communities and the environment.
- Explain why Kanpur encountered a decline in leather production.

Sources:
- Pulitzer Center: India’s leather industry – http://pulitzercenter.org/reporting/india-toxic-price-leather-0
The turmoil today in Hazaribagh is reminiscent of the situation in Kolkata, India in the 1990s and of the collapse of the century-old tannery industry in the 1980s in Gloversville, New York. In the past, the lucrative and polluting leather industry fled Gloversville for foreign shores. Competition from cheaper labour coupled with tougher environmental laws forced the closure of tanneries. The town and surrounding area have spent decades rebuilding the economy and cleaning up pollution left by the factories. 

Source: https://undark.org/article/leathers-long-shadow-gloversville-new-york/

Investigate:

- Research the rise and fall of leather production in Gloversville that contains the ruins of the Zimmer and Son glove factory in New York. Present as an oral report.
- Could the story of Gloversville occur at Hazaribagh? Explain your answer.
- What happens to communities when the leather industry leaves?

The parallels between Gloversville then, and Hazaribagh now, are more than ironic or coincidental – they are instructive. Explain this statement.

Gloversville is working hard to make a comeback. Describe how this is occurring.

The Glove Theatre

The Glove Theatre opened in 1914 as a vaudeville house and showed first-run movies until the 1970s when it closed. Locals saved the theatre from the wrecking ball in 1995 and now it hosts live performances.

Source: https://undark.org/article/leathers-long-shadow-gloversville-new-york/

Resources

- Modified schematic diagram indicating type of pollutants during the tanning process (UNEP) – https://www.researchgate.net/profile/Mwinyikione_Mwinyihija/publication/215765687/figure/fig7/AS:277262298566686@1443115891894/Figure-7-Schematic-diagram-indicating-type-of-pollutants-during-tanning-process.png
- Dispatches: Bangladesh’s Toxic Tanneries a Glimmer of Hope, But the Outlook is Bleak – https://www.hrw.org/news/2015/05/17/dispatches-bangladesh’s-toxic-tanneries-glimmer-hope-outlook-bleak
Correction


The full bibliography is listed below.

Bibliography


