

Welcome
to the Delegates
from
German Federal Environmental Agency (UBA)

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Overview of the textile industry in Gujarat – Structure of the industry, main environmental issues”

Presented By

Trushit Desai

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TEXTILE INDUSTRIES IN GUJARAT

- Gujarat is one of **the leading industrial states** in India and textile industry in particular had contributed in a big way to the industrialization of the State.
- In fact, Overall economic growth of the State is very much dependent on this sector.
- Textile Industry plays an important role in Indian economy, as well. It is an employment oriented industry, occupying the **second position i.e. after Agriculture.**
- Around **25% of fixed investment, production value and employment of the SSI sector** are from textiles alone.
- Further, **23% of GDP** comes out of textiles in the State, **16% of the cultivated land area of the state is for cotton and Gujarat is the largest cotton producer in the country.**

TYPICAL TEXTILE INDUSTRIES IN GUJARAT

- Large Fabric Process Houses are concentrated in Ahmedabad (250) and Surat (450) in the State. The State accounts for **12% share of the total textile exports** of the country.
- A large number of Garment Units and Garment Processing Units are developed in urban areas of the State.
- Clusters of processing units are located at **Surat, Ahmedabad (Narol) and Jetpur**. Though these units fall under decentralized sector, some of them operate on medium scale production capacity having good capability of processing wide range of fabrics.

MAJOR TEXTILE CLUSTERS IN GUJARAT



Cluster	Type of Industry
Kachchh	Handprint
Jetpur	Dyeing and Printing

Cluster	Type of Industry
Ahmedabad	Cotton
Surat	Polyester
Vapi	Mixed and Cement

AHMEDABAD TEXTILE CLUSTER

- Ahmedabad was known as the **Manchester of India**.
- Ahmedabad is located in one of the highly industrialized and urbanized parts of Gujarat State. It is the **seventh largest metropolis** in India.
- Ahmedabad is predominantly an industrial centre with **large-scale cotton textile industry** providing the economic base of the city.
- The entrepreneurial environment created by the local financial elite was largely responsible for founding the modern textile industry in the city. **Denim, blending and cotton industries are the major industrial units.**
- Majority of units are MSI with LSI units like Reliance, Arvind mills etc. **Arvind Mills is second largest denim manufacturing units in the world.**

AHMEDABAD TEXTILE CLUSTER

- By 1950, nearly 0.125 million workers were employed in the textile mills.
- Around 1960 nearly two thirds of the industrial production was in textile and allied industries. It also generated directly half of the total industrial employment in the state. Prior to 1985 there were 85 textile mills in Ahmedabad city.
- While Ahmedabad continued to be dominated by its textile industries, the state also created infrastructure for industrial development in Naroda, Odhav and Vatva which led to a significant diversification in the small and medium industries, related to engineering goods and chemicals.

SURAT TEXTILE CLUSTER

- Textile Processing Industry has flourished leaps and bound in South Gujarat particularly in Surat district. There are nearly **five lakhs of powerlooms** in Surat, which consumes yarn of about **four lakhs of metric tons** in preparing the grey fabrics.
- About **two crores meters of grey textile** is manufacture daily in Surat. Today there are about **450 Dyeing and Printing Units** located in and around Surat in various clusters - Pandesara, Sachin, Kadodara and Palsana.
- These Dyeing and Printing Units are engaged in processing of man-made fabrics, i.e. Dyeing, Bleaching, Printing, Finishing of grey fabrics. Mostly these units are processing the grey fabrics on job work basis.
- They receive the grey fabrics from the Traders / Merchant Manufacturers of the market and process the fabrics as per their requirement. There are about **150 wholesale markets** in Surat. The city of Surat is now known as **"Silk City"**.

SURAT TEXTILE CLUSTER

- The power loom sector gives employment to about **6 lakhs** people. Similarly, the processing industry gives employment to about **5 lakhs** people.
- Besides, lakhs of people are engaged in trade, transport, cutting, packing and ancillary industries like dyes, colour, chemicals, textile engineering etc. Of the total production of cloth in India, the synthetics fabrics accounts for about 90%.
- Surat alone accounts for **40% exports** of fabrics generating revenue of more than Rs. **500 crores**. It produces cheap fabrics affordable to poor people.
- Surat is having a major petrochemical industrial area at Hajira, which is facilitating production of yarn from petroleum, which is basic raw material for polyester based textile industry

- Indian Garment Sector earns high export revenue, it has witnessed substantial profit accruing to retailers and Indian manufacturers are reflected in garment workers' wages. In 2004, Asian trade in the Garment Industry was to the tune of 138 billion US dollars.
- In Bangalore itself there are large retail chains from the US and Europe - like GAP, Walmart, Tommy Hilfiger and JC Penny - have outsourced orders to large factories to the tune of 269.6 million US dollars in 2005.
- A large number of Garment Units and Garment Processing Units are developed in urban areas of the State.
- State Government has, taken active step in developing Apparel Park, one at Surat and the other at Ahmedabad under active support of Union Ministry of Textile.
- Besides, Jetpur, a Centre of Saree Printing, has been already earmarked for setting up a Textile Park in near future.

TEXTILE PROCESSES – COTTON YARN

Cotton



Spinning



Cotton Yarn

TEXTILE PROCESSES – POLYESTER YARN

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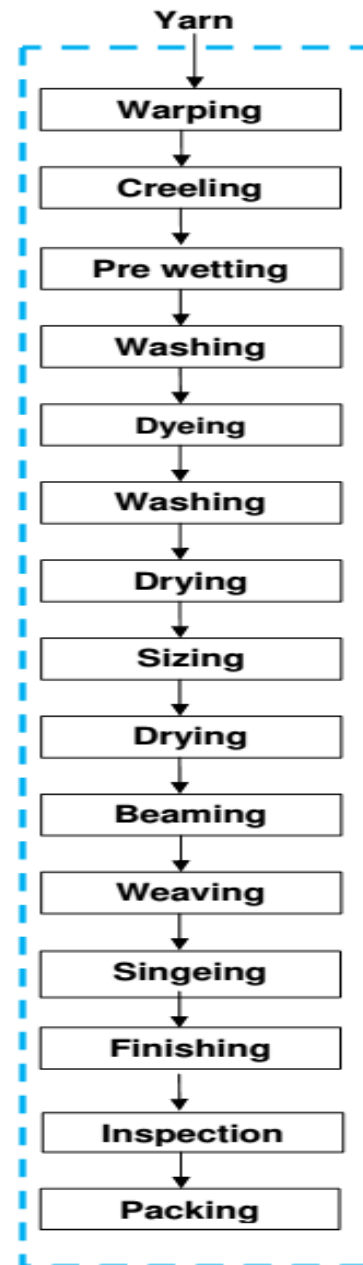


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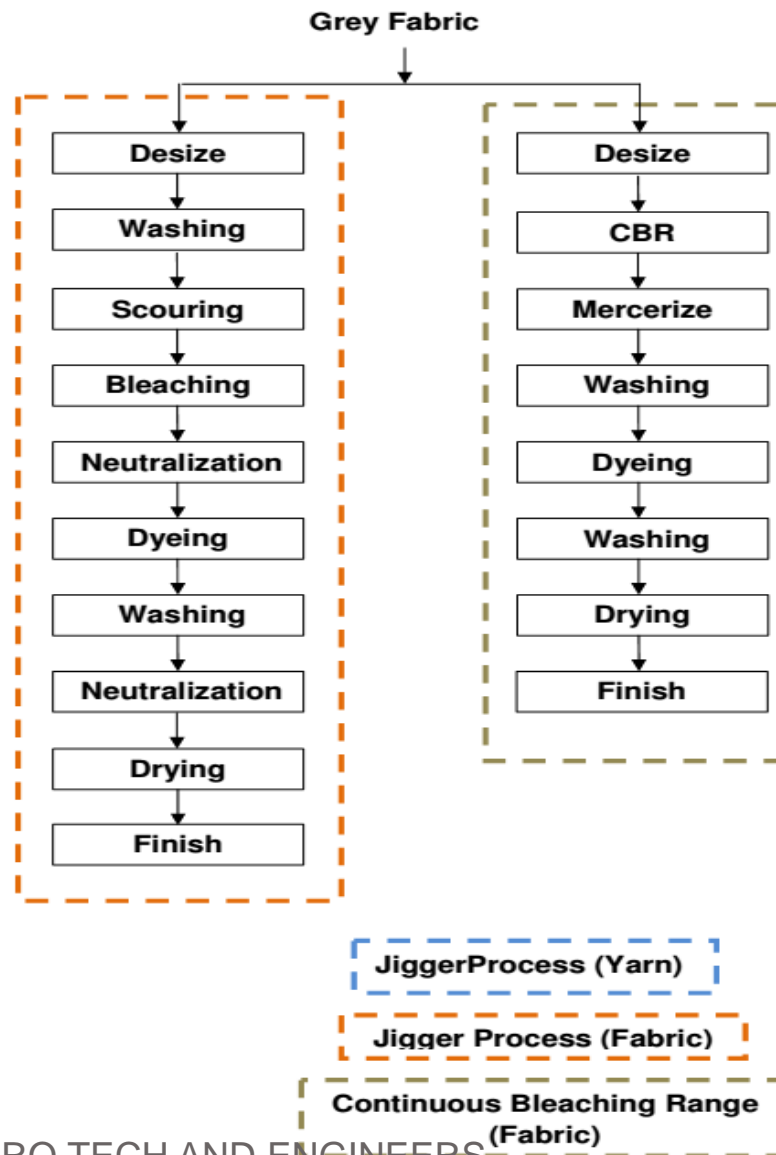
Polyester Yarn

TEXTILE PROCESSES – YARN TO GREY FABRIC



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TEXTILE PROCESSES – FABRIC DYEING



TEXTILE PROCESSES – FABRIC PRINTING

Grey Fabric



Printing



Curing and
Finishing

TEXTILE PROCESSES – GARMENTS

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Design / Sketch



Pattern Design



Sample Making



Production Pattern



Grading



Marker Making



Spreading



Cutting



Sorting/Bundling



Sewing/Assembling



Inspection



Pressing/ Finishing



Final Inspection



Packing



Despatch

MAJOR ENVIRONMENTAL ASPECTS

- **Air pollution.**
- **Water pollution**
- **Solid/ Hazardous Waste**
- **Land Contamination**
- **Use of raw materials and natural resources.**

AHMEDABAD CLUSTER

Environmental Aspects

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AIR POLLUTION

Major Contributing Section	Activities
Boiler Section	Flue gas emission with heat loss with flue gas.
	Surface Heat Loss
	Fly Ash generation (other than NG users)
	Coal Dust generation (other than NG users)

WATER POLLUTION

Major Contributing Section	Activities
Yarn Dyeing Section	Waste water stream generated during washing
	Waste water generated during finishing with softener, stiffener and water.
Dyeing Section	Waste water stream generated during de-sizing.
	Waste water stream generated during first washing
	Waste water stream generated during scouring
	Waste water stream after Bleaching operation
	Waste water stream after washing of cloths with Acetic Acid
	Waste water after Dyeing process
	Waste water generated after final washing and rinsing
	Steam condensate to drain
Radiation heat loss.	

WATER POLLUTION

Major Contributing Section	Activities
Boiler Section	Boiler Blowdown
Printing Section	Waste water generated during discharge printing
	Waste water generated from washing
Finished cloth Washing	Waste water from first three cold print wash
	Waste water from two hot print wash chemical
	Waste water from last three cold print wash
	Waste water from centrifuge

LAND CONTAMINATION

Major Contributing Section	Activities
Entire Manufacturing Activity	Spillages and leakages from various waste water generating sections
	Solid waste /Hazardous waste generation

NOISE POLLUTION

Major Contributing Section	Activities
Entire Manufacturing Activity	Moving parts of machinery
	Operation of DG sets
	Operation of Blowers

THERMAL POLLUTION

Major Contributing Section	Activities
Heat Treatment	Radiation heat loss
	Heat loss through stenter machine exhaust

SURAT CLUSTER

Environmental Aspects

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AIR POLLUTION

Major Contributing Section	Activities
Boiler Section	Flue gas emission with heat loss with flue gas.
	Surface Heat Loss
	Fly Ash generation
	Coal Dust generation

WATER POLLUTION

Major Contributing Section	Activities
Grey Dyeing Section	Waste water stream generated during first washing
	Waste water stream after Bleaching operation
	Waste water stream after washing of cloths with Oxalic acid and Acetic Acid
	Waste water after Dyeing process
	Waste water generated after final washing and rinsing
	Steam condensate to drain
	Radiation heat loss.
	Cooling water to drain to ETP.
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WATER POLLUTION

Major Contributing Section	Activities
Boiler Section	Boiler Blowdown
Printing Section	Spillage during transfer of paste from drum to screens
	Spillage during transfer of excess paste from printing screens
	Waste water generated from blanket washing
	Waste water generated from screen washing
Finished cloth Washing	Waste water from first three cold print wash
ENPRO ENVIRO TECH AND ENGINEERS PVT. LTD.	Waste water from two hot print wash chemical

LAND CONTAMINATION

Major Contributing Section	Activities
Entire Manufacturing Activity	Spillages and leakages from various waste water generating sections
	Solid waste /Hazardous waste generation

NOISE POLLUTION

Major Contributing Section	Activities
Entire Manufacturing Activity	Moving parts of machinery
	Operation of DG sets
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THERMAL POLLUTION

Major Contributing Section	Activities
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	Heat loss through stenter machine exhaust

ENVIRONMENTAL ABATEMENT

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MAJOR ACTS GOVERNING VARIOUS DISCHARGES TO ENVIRONMENT.

- **The Water (Prevention and Control of Pollution) Act, 1974**
- **The Water (Prevention and Control of Pollution) Cess Act, 1977**
- The Air (Prevention and Control of Pollution) Act, 1981
- The Environment Protection Act, 1986, various relevant Rules notified thereof:
- The Hazardous Waste (Management and Handling) Rules, 2008;
- The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989;
- The Environmental Clearance [including EIA - Environment, Impact Assessment] for expansion / modernisation of activity or new projects Procedure Notification, 2006;
- The Environment Public Hearing Rules, 1997;
- Utilization of Fly Ash - Notification of Directions, 1999;
- The Noise Pollution (Regulation and Control) Rules, 2000;
- The Ozone Depleting Substances (Regulation and Control) Rules, 2000;
- The Environmental Audit Scheme, 1996.
- The Public Liability Insurance Act, 1991.

– **Waste water**

- All Industries has installed individual Effluent treatment plant (ETP).
- CETPs are established for industrial cluster to facilitate centralize facility for effluent treatment
- Effluent conveyance system is installed for conveyance of waste water from industrial units to CETP.
- The upcoming CETPs are based on waste water recycling.

• **Ambient air quality**

- Fuel used such as Coal, Lignite, LDO, FO, Bio-fuels, Natural Gas. Use of Petcock as a fuel is under trials.
- Air pollution control (APC) device are installed to improve quality of gas emission.
- APCs such as Bag Filters, ESP, Cyclone Separators, Wet Scrubbers are installed depending on type and quantity of pollutants
- Continues gaseous monitoring system being installed in selected clusters.

- **Solid /Hazardous waste disposal**

- Temporary storage facilities are established in each industrial units
- Common TSDF (treatment, storage and disposal facility) sites are operated as a central Hazardous waste treatment & disposal facility
- New TSDF sites are under construction stage considering future requirements.

- **Noise abatement**

- Acoustic enclosures are made compulsory for DG sets.
- Acoustic enclosures, Closed rooms etc are made compulsory for other equipments like blowers, crushers etc.

THANK YOU

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