World History Class 05
17th March, 2024 at 9:00 AM

INDUSTRIAL REVOLUTION (IR) (1750-1850) IN ENGLAND (09:03 AM):

- **Revolution = Huge change*1/ Small Time = Change/100 years.**
- **IR =**
- Revolution in the process of production of goods.
- Aided by technological innovations and their spread.
- Now faster pace and scale of production.
- (* Imagine hand-operated sugarcane juice machine = IR => Motor operated machine = Eats sugarcane fast, eats many, produces juice fast, produces many glasses).
- Now mechanized production + new sources of power.
- [* Hand => Horse Power => **1769** Steam Engine (Big development)].
- Development in transport and communications.
- (* Rail, road, ports, ships, boats etc).
- Such a huge impact on polity, economy, society, and ideology at the global level that despite **100** years its called IR.

- **Happened in England first because:**
- [**a)** Democracy in Economics:
- Freedom of enterprise.
- Freedom of work.
- Security of property (tangible and intangible)
- - It led to an investment - Return on Investment (Profits)
- Less intervention by the states in economics ie more role of demand-supply forces.
- **b)** Profit motive in every citizen.
- Capitalism = a+ b].

- **Capitalism:**
- Democracy first in England that led to capitalism.
- Rising economy therefore rising demand for goods.
- Spirit/culture of a quest for new ideas due to Renaissance (14th century +).
- (**Renaissance**:
- Goal = Human happiness; Method = Logic/Reason/Rationality).
- Security of property because of democracy, allowed capitalists to accumulate and deploy wealth.
- Accumulation of money from trade allowed the funding of innovators and the spread of machines.
- **Geography** -
- Island therefore less invasion, therefore less war expenditure and war destruction; + huge natural resources of coal and iron.
- (* Coal for steam, iron for machines).
- Good natural harbors boosted trade.
- When above factors came to exist in other countries, then they also did IR.

- **Character of IR in England (09:59 am):**
- Post -Textile - Steam - Iron and steel - Transport - Agriculture.
- **Textile sector:**
- Separate fiber from crop/seed (cotton gin = machine) - III.
- Fiber to thread (spinning) - I.
- Thread to cloth (looming) - II.
- IR began in the textile sector.
- Development of spinning machines created pressure therefore there was the development of power looms, initially based on horsepower, then on hydropower, and finally steam engine **1769** by **James Watt**.
- Now pressure on the first sector for supply of fiber and finally **1793** cotton gin that separated fiber **300** times faster than by hand.

- **Steam:**
- Steam engine **1769** was the biggest development.
- Was deployed in power looms.
- Then deployed in coal mines to remove water.
- Therefore steam engines powered by coal led to faster extraction of coal.
- **1814** - deployed in railways and then in ships leading to the interconnection of the domestic economy and of the British economy to world economy.
- (**Note**: Refer to the diagram on the smart board).

- **Iron and steel:**
- Blast furnaces led to better and cheaper steel ie caste iron.
- (*Pig iron = lower quality).
- Therefore now the faster spread of machines.

- **Transport:**
- Multimodal transport.
- (* Raw material - factory - buyer).
- **1814** - steam powered railways.
- Pakka/macadamized roads.
- Steam-powered ships for oceanic trade.
- Above led to **rail-road-port** infrastructure development.
- Also inland waterways -
- England had navigable natural tributaries + They built canals and then deployed steam engines on boats.
- Net result = all factors of production interconnected.
- (**Eg**: Labor from rural areas could use trains to reach urban factories/migrate).
- British economy interconnected with the world economy.

- **Agriculture:**
- Provided labor and cash crops to industries.
- Enclosure movement (before IR) = Such laws made that big landowners took over lands of small landowners.
- Therefore peasants now tenants and oppressed + Economies of scale led to more land available for cash crop production as now less land need for the food security of England.
- Machines for agriculture therefore now less labor needed.

- **Post:**
- Better and faster communication + ease of doing business as now faster business decisions.

- **Impact of IR (10:55 am):**
- **On Britain:**
- Agrarian economy to industrial economy.'
- From net importer of finished goods to net exporter.
- Raw material imports increased.
- Steal, coal production increased.
- GDP increased and Britain emerged as an economic and political superpower.

- **On British people:**
- The capitalist class gained the most.
- Rise of industrial capitalism and industrial capitalist.
- [* Capitalism = four brothers: Agrarian capitalist, Mercantile capitalist (Europeans came to India as this), Post IR Industrial capitalist, Service sector capitalist].
- Rich-poor divide increased.
- Migration from rural to urban areas, therefore social uprooting.
- (*Recall MG's criticism of Industrial capitalism and his support to a village-based economy).
- Rise of the working class.

- Crowding in cities and start contrast between slums and luxurious gated colonies.
- Pollution as unregulated industrialization.

- **1776 - Adams Smith** wrote - ' **An Enquiry into Nature and Causes of Wealth of Nations**'.
- Argued for a free market economy or Laissez Faire ie govt should have no role in the economy and only demand-supply forces should determine everything in the economy.
- (* MIH - Monopoly of EIC over British trade with East Indies came under attack. **1813** charter ended the monopoly over the business with India and **1833** with China.
- **1850** IR complete, therefore notice stronger the industrial capitalist, weaker mercantile capitalist EIC).

- **On working class (11:24 am):**
- Huge child labor and an increase in women's workforce as worked on low wages.
- **16-24 hrs** workday.
- No social security.
- No job security.
- (MIH - PS **1793** led to tenant at will and IR in England led to worker will).
- No minimum wages.
- Handicraft sector destroyed.
- (*Art of artisan replaced by physical labor of worker).
- Also lost autonomy as now no control over what, how, how much to produce.

- **On ideology (11:34 am):**
- Rise of industrial capitalism.
- Exploitation of the working class led to stronger socialism.
- (* Birth of socialism when **FR 1789** did not benefit the working class).
- Working-class solidarity increased + by observing IR in England, and Karl Marx published his works. **Eg: Communist Manifesto 1848,** and **Das Kapital 1867** that led to the rise of **Marxism**/**Communism**.
- The working-class movement began for the right to form trade unions and for the right to vote.
- **Eg:** Chartist movement (**1830s-40s**), failed.
- Therefore negatives of industrial capitalism and Laisez faire led to the rise of communism, putting capitalism itself under threat of the working class revolution.
- Therefore in the **19th century**, govt intervened in favor of the working class by legalizing trade unions, introducing factory acts in the **1880s**, and gradually gave the right to vote to all by **1929.**

- **Impact on colonies (11:43 am):**
- Exploitation under colonialism increased.
- In the name of modernization rail-road-port network built with the goal of faster extraction of raw materials and faster capture of markets of colonies.
- Therefore ports were connected with sources of raw material to cities in colonies.
- (* Link drain theory of MIH).
- Suez Canal (**1859-69**) hurt colonies like India as reduced the distance by **4500 miles** between Britain and India.
- Therefore revolution in transport increased the exploitation of colonies.

- **Spread of IR outside Britain (11:48 am):**
- Colonies deprived of IR as did not have political autonomy to design own economic policies.
- Late IR in rest of the Europe due to constant warfare and lack of political stability.
- **Eg**: **1792-1815, 23** years of war between France and the West.
- **1815** machines introduced but then **1830** and **1840** revolts for self-determination in the whole of Europe and then wars for unification in the **1860s** by Prussia and Italy.
- Therefore IR post **1870** only.
- Germany rapidly industrialized post-IR **1870** to become the second economic power to Britain + began naval rivalry **1914**.
- Therefore Britain anxious @ its colonial empire.
- France lacked coal and iron therefore IR after **1870** but far behind Germany and the same case of Italy.
- Russia was rich in raw material but lacked free labor due to serfdom until **1861** + lacked capital for investment.
- (*Less access to warm water, therefore poor trade, therefore less accumulation of wealth).
- Vast territory and scattered population, therefore high cost of interconnecting all factors of production + Constant warfare.

- **Eg**: The **Napoleonic wars** till **1815, 1853-56** Crimean War, **1904-05 Russo-Japanese War**, **1905 - 1st Russian Revolution, 1914-17 - 1st WW-I, 1917** - **October Revolution, 1918-20 - Russian Civil War + Lenin's New Economic Policy focussed on agri sector (1921-29).**
- Therefore IR only after **1929**.
- US - busy in territorial expansion, West of Appalachian mountains and then civil war **1861-65**.
- Therefore IR after **1865**.
- Japan had feudalism till **1868**, therefore IR after the **Meiji Restoration 1868.**
- Therefore **1st IR 1750-1850.**

- **2nd IR = 1870 +:**
- Sources of power = Oil, gas, electricity.
- Internal combustion engine.
- The chemical and banking sector played an important role.
- New methods of communication, for example telephone.
- The state took the lead by assisting capitalists and also by setting up of PSUs.
- **Eg**: Russia, Japan.
- While in Britain IR was led by capitalists.
- Industrial espionage to get technology from Britain.

- **3rd IR - 1969 +:**
- Civil nuclear energy.
- Rise of electronics, computers, and telecommunications.
- Invention = programmable logic controllers ie automation of manufacturing process + Robots.

- **4th IR ongoing:**
- Internet and its applications like AI.

TOPIC FOR THE NEXT CLASS: Colonialism.