

## **A Historical Study of Saltpeter Trade of Bihar**

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### **Abstract**

This paper is my humble effort to examine the development of saltpetre industry in Bihar. For gunpowder industries, saltpetre was a decisive factor in the world politics in eighteenth and nineteenth century. Apart from military uses, saltpetre also was used in industries for textile bleaching and tanning, soap making and metallurgy; even as a preservative by cheese and sausage makers. In this paper, special attention has been given to examine the people associated with the production of saltpeter in Bihar; climatic condition of Bihar for making superior quality of saltpeter; saltpeter production system and role of agents; trade routes; role and involvement of Europeans Companies in saltpeter trade; policy of monopoly and its effects on Indian economy and people associated with it; volume of trade etc.

**Key Words:** - Saltpetre, Nunia, Gangetic regions, Dadni System, Gomastas

Saltpeter, potassium nitrate  $\text{KNO}_3$ , as the main ingredient for making gunpowder was a decisive factor in the world politics in eighteenth and nineteenth century. So long as potassium nitrate formed as essential constituent of the only explosive used in large quantities, and until the discovery of large deposits of sodium nitrate in Chilli, the saltpeter production of India added to political importance on the country, and the great fluctuations in the price of the saltpeter gave rise to heavy speculation during period of international complications.<sup>1</sup> Apart from its obvious military uses, saltpeter was taken by fireworks makers, or were consumed in diplomatic courtesy of firing salutes, a custom maintain by all Europeans ships and forts. Saltpeter also was employed in industrial processes, ranging from textile bleaching and tanning to soap making and metallurgy; even as a preservative by cheese and sausage makers in Europe. However, in early modern age, gunpowder making absorbed the lion's share of

saltpeter production, with the amounts required for all other uses comparatively minuscule. The navigators and sailor also use it as ballast instead iron ballast.

### **Saltpeter- Climate and process of natural production**

Saltpeter is formed in warm climates by bacterial action during the decomposition of excreta and vegetable refuse. Where people and animals live in close proximity, debris accumulates in and around their homes. The contact between putrefying material, alkaline soil, plant ashes, air and moisture allows nitrification - that is the conversion of nitrogen compounds from animal and plant decay into nitrates which penetrate the soil. Dissolved in rainwater, the deposits evaporate on the surface to form crude saltpeter, as a white flower like powder. This must be washed to remove earth and impurities; then boiled and evaporated to refine it.

S Bhattacharya (The Economic History of India, vol. 2, P. 283) writes that saltpeter was mainly a product of Bihar. Patna was throughout the eighteenth century, the centre of an export trade. The natural conditions of Bihar favours for formation of saltpeter due to availability of saline soils in most of the regions. The production of saltpeter required a hot humid climate with ample firewood, inexpensive labour and ideally navigable river to enable producers to ship their product to market cheaply. In India, Bihar was the only place combined all these conditions. Patna was the centre of export of saltpeter to other parts of India. Patna is situated on the bank of the Ganga and three important rivers of Bihar – Ghagra, Ghandak and Son joins the Ganga. Some important towns of Bihar are Patna, Bhagalpur, Muzaffarpur, Monghyr, Gaya, Chapra, Hajipur and Rajmahal.

Bihar was the natural laboratory for production of saltpeter due to favourable conditions like population density more than 500 per square miles, agriculture and domestication of animal as main occupation, mean temperature 78°F and over 80 per cent humidity in air. This condition was favourable for the growth of nitrifying bacteria, which convert ammonia by successive steps into nitrous and nitric acid. Wood and cow dung were largely used for fuel, and they form a perfect laboratory for formation of potassium nitrate. In the long period of continuous surface desiccation, which follows a small monsoon rainfall, the compound so formed in the soils are brought to the surface by capillary action, and appear as a white powder or dried salts which is collected and purified for export as saltpeter.<sup>2</sup>

### **Salt peter- Production area**

In India, saltpeter was produced mainly in the region of Bihar, Bengal, Agra, Tamil Nadu, Andhra and Karnataka regions. In South India main area of production are Guntur, Coimbatore, Kurnool, Anantapur, etc. In India, Bihar had the most favourable natural condition for the formation of saltpeter due to availability of saline soil in the region. Saltpeter was mainly a product of Bihar. Patna was throughout the eighteenth century the centre of an export trade,<sup>3</sup> the main concentration of saltpeter in Bihar was in upper Gangetic regions of Patna, Hajipur, Purnia, Tirhut, Mau, Chapra, Singhia, Saran etc.<sup>4</sup> All manufacturing units were established in the towns having proper transport facilities. Saltpeter factory were established in Singhia, Chapra, Patna, Gaya, Saran and Champaran.

### **People involved in Production for Saltpeter**

Saltpeter production was part-time peasant activities. Certain extractive industries like salt, saltpeter and, more surprisingly, iron, were in the hands of part-time peasants or peasants castes. The tendency towards specialization, characteristic of all manufacturing activities in India, was never absent from the traditional ‘agro-manufacturers’. At the same time distinct hereditary occupations connected with different productions like silk production, oil pressing and Saltpeter was equally characteristics of traditional economy.<sup>5</sup>

There was caste specialized caste, *nunia* exclusively concerned with the manufacture of saltpeter in Bihar.<sup>6</sup> Collected saline soil called *Noony- Matty* from agriculture field and the places where

cattle were kept by *nuniia* were soaked into water for two to three days. The saline water was boiled and after condensation formed cutcha (raw) petre. To further refine the material, it was boiled twice or thrice. The East India Company officials' in-charge regularly inspected the process of production of saltpeter and they were averse to any experiment in the mode of production.

### **Role of Agents**

Closely associated with the localization of manufacturers was the phenomenon of the merchants' growing control over the producers and production. The most characteristic instrument of the merchants' control was the system of *dadni*, or advance of cash and raw material. So far as our evidence goes, by the later years of the seventeenth century and surely by those of the eighteenth, both the Europeans companies and Indian traders procured virtually every commodity from the market- from Bengal and Coromandel textiles and Bihar Saltpeter to Bayana indigo, Kashmir shawls and even Bihar iron- on the basis of the *dadni* system, if not some even more direct system of control over artisans.<sup>7</sup>

The procurement of export goods, through *gomastas* or paid Indian agents under the supervision of the company servants cut out the Indian middlemen, the *dadani* merchants, in most branches of trade in next two decades. Agency system which introduced in India in 1787-9 restricted the opportunities for Indians. In fact the agency system aimed to exclude even the petty brokers (Dalals) saltpeter was except for a brief period when *gomastas* were engaged, procured through *paikers* and *dalas*.<sup>8</sup> These brokers used unfair means to

extract profits in the procurement process which directly hampered the profit of the producers.

Saltpeter was produced and marketed collectively by the '*nunias*'.

We have many instances of state and its agents to monopolize the saltpeter trade. There were instances of ordered from Nawab prohibiting Europeans from purchasing saltpeter and ordering the *assamies* to deliver all the saltpeter to the Nawab. Political interference was generally intended to receive personal gain. Hence, the merchants who had substantial access to political quarters used their connections to influence trade. From 1740s till the mid 1750s, Haji Ahmad, elder brother of Nawab Aliverdi Khan managed small feats in this trade by buying cheaper saltpeter from *nunia* and selling at higher prices to Europeans. There were also firms of rich merchants, moneychangers or bullion brokers who exercised an effective control over Saltpeter trade. During the middle of 18<sup>th</sup> century Khwajah Wajid, an Armenian merchant of Hugli and Chandernagore held monopoly of saltpeter till 1758. Omichand, who played an effective role in battle of Plassey, also controlled the business after 1758.<sup>9</sup>

Later the dramatic enlargement in the demand, with the coming of the European companies, set into motion a process by which the great merchants gradually moved into this line of business. The brokers employed by the Europeans companies for the procurement of saltpeter were called as Moostajeers.<sup>10</sup> But as there was a state monopoly in saltpeter trade; the indigenous brokers of the company had to reach the person monopolizing the sale.

### **Saltpeter Trade Routes**

Saltpeter was produced in abundance in Bihar, and from Patna, sent down the river to Bengal which was the principal emporium for its export.<sup>11</sup> The central location of Patna on the confluence of three great rivers, Ganges, Gandak and Son, flowing in from the north as well as the south, made Patna a distributing centre, at a time when river transport was cheap and popular. It was connected with up country towns like Agra, Allahabad, Banaras, Delhi and Lahore on the west by river and land routes and so with the general system of overland traffic to Central Asia, West Asia and Africa (including Egypt).

In fact Patna was one of the four ports (*bandar*) which the Mughals set up for the purpose of Eastern India: Hughli or *bakhshbandar* for realizing duties from external trade, Dacca (*shahbandar*), Murshidabad (*pachotrabandar*) for collecting duties from internal commerce of Eastern and Western Bengal respectively, and Patna (*buzurgbandar* or *budrakabandar* of East India Company's records) for collecting duties from internal and interprovincial trade.<sup>12</sup> However Tavernier made unfavorable remarks on the prevalence of corruption in the working of the custom office at Patna, the officer being corrupt. Tavernier comments that the importance of Patna as an inland port grew as that of Rajmahal declined on account of changes in the course of the Ganges.<sup>13</sup>

The overland route from Agra to Patna followed the course of the rivers, at some distance south of the waterways between Shikohabad and Chaparaghata, closer to it between Rampur and Allahabad and

hugging the north bank between Allahabad and Banaras. Between Banaras and Patna, the route first moved south across the Son and then north again forming a triangle with the river as one side. Another route across riverine Bengal linked Balasore in Orissa via Midnapore, Kasimbazar, Rajmahal and Monghyr to Patna.<sup>14</sup>

As the cost of water transport was relatively low, a substantial part of the interregional trade in cheap bulk goods like food grains, salt and saltpeter was carried along the coast or the inland waterways. For the same reason, even the cross-country trade in more expensive items used the water routes whenever practicable. The main north Indian water route was of course the Ganges, linking Allahabad to Rajmahal via Banaras and Patna. Beyond Rajmahal, the trade goods moved to and from places like Malda, Hughli and Dacca along the numerous tributaries and distributaries of the Ganga.<sup>15</sup>

Throughout most of north India, 1757-1857, the underdeveloped state of transport confined trade in bulk commodities to individual region, keeping production oriented towards local demands. Foodstuffs, raw silks, and saltpeter could be shipped in bulk on the Ganga river to take advantage of inter-regional price differences along with goods in the luxury trade attracted by lower shipping costs. Even in the mid-eighteenth century there was considerable long-distance trade in bulk commodities on the Ganges.<sup>16</sup> The Murshidabad city in the 1770s and 1780s imported saltpeter from Purnea and Patna.<sup>17</sup> Usually, saltpeter was carried from Patna down to Hughli and Balasore or Pipili in various types of country craft known as *pattelas*, *barns*, *purgoes*,

*palwars* etc, and partly also in sloops and pinnacles maintained by the English and Dutch Companies on the river. Alexander Hamilton (1688-1723) observed that the Hughli- Patna Saltpeter *purgoo* boats were over 50 yards long, 5 yards broad and 21/2 feet deep and had a capacity of over 2000 tons. The necessities of Saltpeter trade served as an incentive to boat construction under the patronage of East India Company.<sup>18</sup>

Saltpeter was a non- perishable chemical, impervious to rough handling, and as such admirably suited for ballasting the East- Indiamen. The Export of saltpeter from India in the seventeenth and eighteenth centuries was a new development of Indian maritime trade. According to Moreland, the historians of the Mughal economy, there are few references before the end of the sixteenth century to saltpeter being carried to Europe by Portuguese ships.<sup>19</sup>

Its bulk and weight would of course make it a prohibitively expensive commodity to export overland. But the economics of seaborne transport completely altered the picture, and the growth of an extensive munitions industry in Europe and the wider use of artillery made Indian saltpeter both a desirable strategic raw material and a profitable article of trade. There is no doubt at all that Dutch and English demand for Indian saltpeter was closely connected with national political and military considerations.<sup>20</sup>

### **History of Saltpeter Trade**

#### **Mughal Period**

During Mughal period saltpeter acquired a new importance as an item of export. Saltpeter was used for both the manufacture of gunpowder and, rather bathetically, cooling water for the affluent.

It was exported first from Gujarat and later from Coromandel and Bengal, i.e. the Patna area, as well. The exports from Gujarat actually came from Ajmer area. The total output in the Patna area around 1688 came to 226,200 maunds when refined. The Patna saltpeter was considered the best for the manufacture of gunpowder, a commodity produced in the imperial *karkhanas* as well as the Europeans factories.<sup>21</sup>

#### **European Companies and Saltpeter Trade**

From seventeenth century, saltpeter trade from Bihar was intensified with the growth of interest of European companies due to multipurpose use of saltpeter like gunpowder for military purpose, its use as ballast instead of iron ballast for home-bound European Ships.<sup>22</sup> The European companies played an active part in the economy and politics of Bihar. The Portuguese traders were first to enter into trade relation with Bihar but they were expelled in from Bihar in the year 1632 with the arrival of Dutch for trade in Bihar. The Dutch proved most formidable opponent of The English. Unlike The English the Dutch were more interested in saltpeter and opium than cotton and silk articles. Tavernier who visited Patna on 21<sup>st</sup> December 1665, writes: “ The Dutch Company has an establishment there on account of the trade in saltpeter, which it refines at a large village called Chapra, situated on the right bank of the Ganges, 10 *kos* ( measure of distance, one *kos* = 2 miles) from Patna. Arriving at Patna with Bernier, we encountered some Dutchmen in the street who were returning to Chapra.”<sup>23</sup> The Dutch Power received a jolt with the emergence of British Power in India. When the East India Company

reached India for trade; they have to face a bitter rivalry earlier from Portuguese, Dutch and later with French Power. Under Robert Hughes and John Parker, the East India Company established first factory at Patna in the year 1620, but it was closed within a year. Another unsuccessful attempt was made in 1632 when Peter Mundy reached Patna after company suffered from famine in Gujarat.<sup>24</sup>

The East India Company established a factory at Hughli in 1651 and at Patna in 1657. From the middle of seventeenth century, the East India Company gave importance to saltpeter trade from Bihar. The East India Company decided to send 5000 pound a year for purchasing saltpeter which was about 40 to 50 per cent cheaper than Hugjili<sup>25</sup> but again Patna factory was closed by Aurangzeb's *farman* of 1701 banishing European trade in India. The East India Company secured a *farman* for Bengal trade from Farrukh Siyar in 1717 and superseded the Dutch in Bengal trade.<sup>26</sup>

In the early phase the East India Company was not interested in saltpeter trade in Bihar. But this attitude change in 1730s when the European companies- the Dutch, the English and the French signed an agreement for two years to buy saltpeter jointly and divide the share of profit among them, but this arrangement didn't last long. Another futile attempt was made to come to an understanding for trade share in 1743.<sup>27</sup>

After failure of European companies attempt for collaborative saltpeter trade, in the 1725 an indigenous confederation was formed by fourteen Indian merchants of Chapra to maintain steady supply of saltpeter to the European companies and to

keep a check on,<sup>28</sup> but the first indigenous confederation was broken in 1730.

The Indian merchants enjoyed some sort of monopoly on saltpeter trade. Omichand, a prominent merchant of Calcutta, enjoyed monopoly of saltpeter trade with the assistance of his brother named Deepchand who was awarded *faujdari* of Sarkar Saran from Aliverdi Khan in 1745. Armenians merchants Khwaja Wajid and Khwaja Ashraf also enjoyed the monopoly. The European companies particularly the Dutch and the English alleged that Omichand and Khwaja Wazid helped Deepchand to acquire monopoly in saltpeter trade in 1753 from Nawab Siraj-ud-Daula.<sup>29</sup>

By the mid-eighteenth century, the superiority of the English East India Company over her Europeans rivals was clearly established. This was a determining influence in the direction of India's trade. For the trade with Europe was by now the sole concern of the English company. Besides coarse textiles, finer fabrics, silk yarn and raw silk, indigo and Saltpeter now accounted for a steadily increasing proportion of the companies' exports from India.<sup>30</sup> In the year 1757, a new chapter was opened in the political and economic history of Bengal with British victory in the battle of Plassey and with it the East India Company's dominance in satpetre trade was established. Lord Clive secured a *Parwana* from next Nawab Mir Jafar in exchange of company's military service. The line of *Parwana* are as such, "...through the means of Colonel Clive the salpetre lands of the whole province of Bihar have been granted to the English Company from the beginning of the Bengal year 1165, in the room of room of Khawaja Muhammad Wazeed; you are

therefore directed to establish the authority of their gomashtas in all the Saltpeter lands of the aforesaid province, to give strict orders to saltpeter *picars* not to sell an ounce of saltpeter to any other person and to receive from the company the stipulated *nuzzerana* and money for the aforesaid lands.”<sup>31</sup>

Thus, the East India Company became the sole master of saltpeter trade of Bihar. By seizing Bengal, the British exerted mastery over 70 per cent of world’s saltpeter production during later half of 18<sup>th</sup> century. As we have seen earlier that the east India Company who entered into Bihar trade for purchase of cotton and silk materials have no knowledge of saltpeter because Hughes and parker who reached Patna in 1621 had not mentioned about the saltpeter. After victory of Plassey, the East India Company followed a very aggressive policy towards saltpeter trade. The company first made its purchase by contract and then by agency. Before Plassey Khawaja Wazid, Omichand and his brother Deepchand played a very important role in Saltpeter trade with European companies. Khwaja Wazid managed the trade through his agent Mir Afzal and his brother Ashroff, who was stationed in Bihar. Omichand also had trade relation with the East India Company. In the year 1753, Khwaja Wazid and Omichand, both submitted their quotation for saltpeter trade to the East India Company. Ultimately Omichand got the proposal to supply saltpeter to the East India Company by reducing price in comparison to Khwaja’s quotation. Omichand signed a contract and was given Rs. 50,000 for the purpose. He was advanced Rs. 150,000 for the next couple of years to supply saltpeter to the

company<sup>32</sup> but in the early year of 1757, the East India Company ordered to seize the property of Omichand on the allegation that he helped the Nawab in capturing Calcutta. The East India Company also ordered to end the Omichand’s monopoly on saltpeter trade.<sup>33</sup> New contract was signed was signed with Huzurimul who received an advance amount of Rs. 100,000 for supplying saltpeter on 10 per cent commission on it.<sup>34</sup> After battle of Buxar, the East India Company acquired complete monopoly on saltpeter trade of Bihar.

The East India Company further changed its policy in 1770s with the growing demand of saltpeter and introduced *Kistbundee* system, a payment system in advance in installments. The Company also hired Mr. Mackenzie for transportation of saltpeter from Patna to Calcutta.<sup>35</sup> But irregular supply of saltpeter forced the company to bring some change in its policy. The company formed the policy that all produce from the factory of the Company would be traded by company; the Commercial resident was employed and all other persons working under him be prohibited from trading in saltpeter.

### **Volume of Trade**

Export of saltpeter from Bihar was moderate in the seventeenth century, it was about 12049.09 *maunds* (one maund = 40 Seers, one Seer = 16 Chhattaks or 80 Tolas) in the second half of 17<sup>th</sup> century.<sup>36</sup> But we find remarkable growth in the saltpeter trade in the 18<sup>th</sup> century because it constituted one of the principal trading consignments from Bihar. It was found that Bihar saltpeter was cheaper and better quality in comparison to saltpeter found in

other parts of India. Ganga trade route also helps in easy transportation of saltpeter from Patna to Hughili. There was a high demand of saltpetre from Europe also. The East India Company had five factories- Singha (54,000 maunds), Chapra (37,000 maunds), Hajipur (3,000 maunds), and Futwah (8,000 maunds); and overall normal production was 1,30,000 to 1,50,000 maunds annually.<sup>37</sup> Thus, we find that of demand of saltpeter before 1750 was very normal, but with the victory of the East India Company in 1757 at Plassey and Buxar, the demand increased. In 1750 about 4333 maunds of saltpeter was exported but after Plassey victory in the 1757, it was 13928 mounds, about three times of earlier export. Procurement of saltpeter was as such, 1750 (4333 maunds) , 1757( 13928 maunds) , 1965 (41000 maunds), 1769 i.e the year of famine, lowest export ( 4933 mounds) , 1773 ( 209166 maunds) , 1779 ( 1258000 maunds) , and in the year 1789 the highest export (127000 maunds.) During famine year (1769- 70), the company's procurement registered low collections but it recovered in the following years. In 1775 the procurement was all time high and recorded 257,000 maunds. This increase in procurement and export was due to the Company's successful policies of collecting all the produce and distributing it to others on its own terms and condition. Earlier there were many players who also procured saltpeter for their supply but afterwards it was only the English who had the sole right over production and distribution in saltpeter.

So long as potassium nitrate formed as essential constituent of the only explosive used in large quantities, and deposits of sodium nitrate in Chilli, the saltpeter

production of India added to political importance of the country, and the great fluctuations in the rise of salt gave rise to heavy speculation during period of International complications.

After discovery of deposits of sodium nitrate at Chilli, the Indian supply was no longer essential to the chemical industries of Europe, though the cost of manufacturing and transport is sufficiently low to maintain the export trade at fairly uniform level of about 20,000 tons a year, with an average value 262,000 pounds of the total export, 80 per cent is divided between United Kingdom, Hong Kong and United States, and 98.5 per cent of the total leaves India by port of Calcutta.<sup>38</sup>

### **Conclusion**

It is interesting to note that of the commodities exported by the English Company from Bengal between 1663-4 and 1719-20, cotton yarn and raw silk had remarkably stable price, while saltpeter prices increased by about 50 to 67 per cent in the first year of the eighteenth century. It is also interesting to note that where The English has little control over production, e.g saltpeter, the procurement price does show an upward trend.<sup>39</sup> Some idea of the rapid rise in wartime saltpeter consumption is given by the following figures: 2,000 tons per annum in the War of Spanish Succession at the beginning of the eighteenth century; 20,000 tons during the Napoleonic wars a hundred years later; 3,000,000 tons a year by the First World War.. After 1918 the saltpeter industry declined rapidly from an export total of 35,000 tons in 1860 to 8,862 tons in 1934-35 in spite of revival measures during the 1920s.

The East India Company explicitly institutionalized a monopoly in saltpeter trade for a brief spell in 1793-1811 and 1813-14. The concomitant of the progress towards monopoly was the deterioration of income and living standard of the *nunia* caste (saltpeter maker) in Bihar. The East India Company purchased first by contract basis and then by agency. The Company

purchase Kutch saltpeter which was cheaper than *culmy* saltpeter. The original producer of saltpeter, *nunia* get less than 40 per cent of market value of saltpeter. On the whole, the East India Company was greater beneficiary from the saltpeter trade, and the producers, *nunia*, were the greatest looser.

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